

# THE MINING AND METALLURGICAL JOURNAL.

FORMERLY THE PACIFIC COAST BULLION.

VOL. XVI, No. 10

LOS ANGELES, CAL., FEBRUARY 15, 1897

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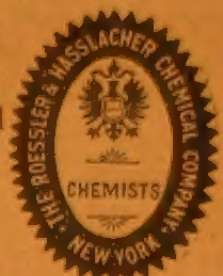
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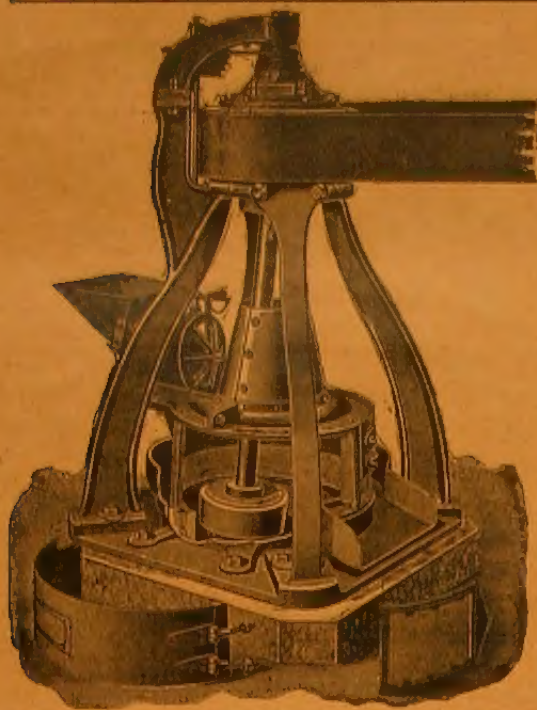
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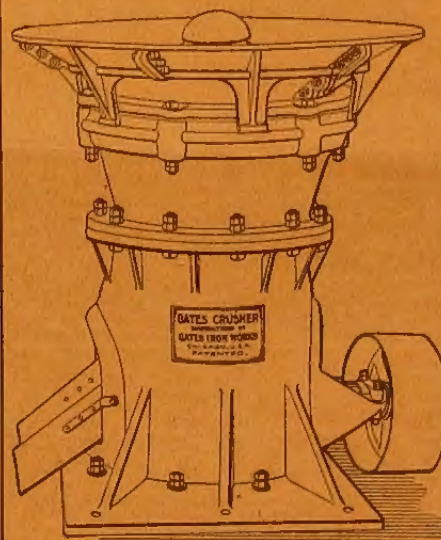
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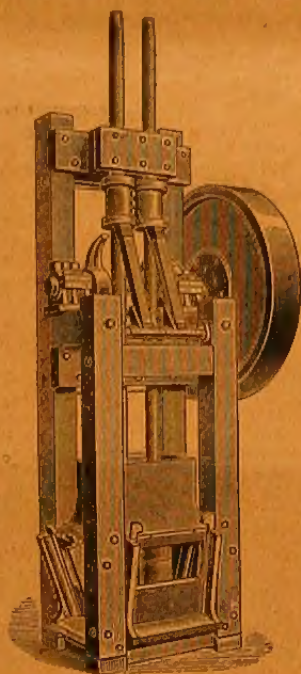
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# THE Mining & Metallurgical JOURNAL

CREATED AS ONE OF THE OFFICES AT LOS ANGELES, CALIFORNIA,  
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VOL. XVI. FEBRUARY 15 No. 10

F. W. EDELSTEN, Editor.

LIONEL A. SHELDON,  
Special Contributor.

ULRICH KNOCH, Publisher

OFFICE, Stimson Block, Los Angeles, Cal.

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PROF. R. A. F. PENROSE.

This gentleman is an applicant for appointment to the governorship of Arizona. Prof. Penrose has been connected with Arizona for many years in business affairs, and for the last five has been a bona fide resident. He is a graduate of Harvard College, a scientist and an able mineralogist. He is president of the Commonwealth Mining Company, which has invested a large amount of money in Arizona, and Prof. Penrose has done much to develop the wealth and promote the prosperity of that territory.

The character of the Professor is above reproach, and he is of a family of the highest standing, and is one of six brothers, all of whom are men of talent and enterprise, one of them has just been elected senator from Pennsylvania.

Probably there is no man in Arizona who understands the wants of the territory better than Prof. Penrose, and surely there is no man who is more devoted to its welfare. Our territories have usually been neglected in the matter of appointments to office by the President. Until within the last dozen years, appointments were made from anywhere in the nation, now, the rule is to appoint only residents. But Presidents are apt to select mere politicians, whose aim is to promote party or personal success at the expense of the material and other interests of the people. In order to assure a state a high character, it is necessary that territorial tutelage should be on a high plan. The appointment of Prof. Penrose to the governorship will give to Arizona an impetus in the right direction, and fit the territory for a high place among the States of the Union when her admission shall come. We do not know who the other applicants are, but we feel confident that no man in the territory is superior to the gentleman we have named.

## DISTINGUISHED TREASURY SECRETARIES.

The most conspicuous names in the list of men who have presided over the fiscal depart-

ment of the government are those of Alexander Hamilton, Albert Gallatin, William H. Crawford, Robert J. Walker, Salmon P. Chase and John Sherman.

A secretary of the treasury has very little to do with the details of the work in his department. There are subordinates who take care of that part. The great duty of the secretary is to study and devise policies that will assure ample revenue, and to take care that they are such as will promote the welfare of the people. He should be an able economist and statesman. It is not enough that he is what is called a good business man.

The idea is somewhat prevalent that a good banker will make a good secretary of the Treasury, but the business of banking has no connection with the real business of the financial department. One who has spent his life within the walls of a bank cannot be a broad man, what he is required to do renders him narrow. His thoughts are directed to the achievement of two objects, the one is to become informed of what is a good security, and the other is to make the bank earn the largest possible income for the stockholders. A bank president is not required to do that which will advance the public interests, for they and that of the bank are in conflict. A banker rarely, if ever, studies economics on broad lines. The money grabbing work to which he is assigned is inconsistent with large and comprehensive ideas touching the common weal. One banker only has been secretary of the Treasury, and he was Hugh McCullough, and he only distinguished himself by commencing the retirement of the greenbacks, not in obedience to legal requirement, but on his own volition. A banker is perpetually afraid that the money volume will become redundant, or that it will be so plenty that his bank cannot obtain a satisfactory rate of interest.

The great secretaries which have been named were not bankers but lawyers, men who had had experience on a broader scale than can be gained within counting rooms of money changers. None of them favored a contracted circulation except Sherman, and his reputation rests on the success with which he managed to bring about specie resumption. In this work it should be said he was immensely aided by fortuitous circumstances, by good crops in this country and short crops in Europe. Sherman is gifted with a talent for close management.

The mints and the national banking system are within the jurisdiction of the treasury department, and while Congress can direct by law as to what kinds and volume our money shall be, still a secretary of the Treasury should be a man divested of prejudices in favor of any special branch of business or of any class of people. As he recommends policies to the President, and through him to Congress, he should be a man of large grasp of mind, a larger grasp than one can acquire by confining himself to measuring calicoes, weighing tea and coffee, or watching the coming in and going out of dollars and cents. His judgment may appear to be good from his standpoint, but bad from any other. At this particular time, the greatest wisdom is required to bring the country out of the existing depressed condition. It would seem that no man with a comprehensive mind can fail to see that the meagreness of our volume of money is a cause of the depressed condition, and that as population and trade increase, expansion instead of contraction is needed. It is probable there are broad-minded bankers, but they are exceptional. Let the banks

flourish, but not to the detriment of the masses.

Retirement of the greenbacks, and conferring the power upon banks to supply the country with paper money, would create a trust the like of which this country has never seen.

## THE SALT LAKE ROAD.

It seems to be pretty well settled that a road will soon be built from Salt Lake City two or three hundred miles in the direction of this city. As the projectors of that road propose to come no further this way why do not our capitalists undertake to build from this end and meet that road? Nothing would be more advantageous to this part of the country. The existing transcontinental lines may object, as such a road will detract from their business, but should that be the case it constitutes no reason why our people should not promote their own welfare by taking up the enterprise. Every day of procrastination deprives this city of a profit which it should receive. A road through the vast and productive section which it would traverse will, in a brief time, add twenty-five per cent. to the business of Los Angeles.

## A FALSE IDEA.

Because the goldites talk so much about the coinage of silver through international agreement and hold that it cannot be safely done by us without such agreement, there is the belief that then it will become international money. There is no such thing as international money, not a coin nor a note that will pay a foreign debt by legal compulsion. Our gold coins will not pay such a debt, though they will be taken at regulation weight and fineness.

Money in all countries is for domestic use, for a measure of exchange among people of the same nation. It makes no difference to us, so far as home commerce is concerned, what England, France, Japan or any other people use in their domestic business. No nation creates a money for the purpose of having it go abroad. If the law of a nation creates this or that kind of money no advantage is derived by one citizen over another. What this country should do is to create a financial system that will accommodate our own affairs. Our trouble now is that we have entered upon a financial policy that has no reference to our domestic wants. It is narrow and oppressive. There probably never will be an international money, and it is a phantom that should be abandoned, and the practicable idea of providing a national money put in its place.

## A DIVIDED CABINET.

Mr. Gage, the to be Secretary of the Treasury, has defined his ideas of a financial policy. One of which is that the greenbacks should be retired. Mr. Sherman, who is to be the head of the Cabinet, is opposed to it, unless he has changed his mind. He has said in speech and in writing he is for keeping the greenbacks in circulation. Mr. McKinley will have to settle that controversy. It is uncommon that there is a schism in a Cabinet before the members enter into office.

A company has been organized in Fresno to develop an oil claim in the southwestern part of the county. It is proposed to build a pipe line nine miles long to the railroad.



## CORRESPONDENCE

## CALIFORNIA.

GARLOCK, KERN CO., Feb. 1, 1897.

EDITOR JOURNAL:—Our little city of mills is becoming quite cosmopolitan with mail and express twice per day and eleven 6-horse stages each way. Many buildings are going up, and in all there are now four lumber yards, four general stores, two drug stores, five saloons, six livery and feed stables and many other enterprises.

A ledge of copper ore has been found near F. H. Heald's coal mine, which is very rich and is black oxide of copper, and it is said to be as rich as copper can be worked.

The excitement at Randsburg is increasing daily, and it is said hundreds of the new comers are from Cripple Creek. A meeting has been called to change the by-laws of the district so that a few men cannot hold all the ground in sight simply with monuments and no developments.

Placer miners are now working under ground for the winter, as the rains have been so heavy that all surface dry washing must be abandoned until dry weather.

S. P. R. R. surveyors are at work between here and Mojave, and many believe they will build from that point to Garlock, but their intention may be much different.

Garlock is the center of sociability, and it is becoming the custom to have a grand ball every week. Much surprise is manifested at the number of women and children present and at the absence of all rough characters.

Giant powder shakes the Goler ranges from Kane Springs to Goler at all times of day and night, and some splendid properties are being opened on this side.

John Searles, of the Borax lake, is greasing his big Borax wagons and getting his mules and horses in shape to move hundreds of tons of Borax as soon as the tariff is again put on that commodity.

OLD CORRESPONDENT.

## Miscellaneous Mining News.

## ARIZONA.

The Prescott Courier prints the following relative to mines in the Chaparral district:

The Pratt mill, run by Randal, is in good shape. It consists of five 850 pound stamps and two Triumph vanners. The mill will start up on ore from the Postmaster mine, and there is plenty of ore in sight for a long run.

The Lottie mill is running night and day with its ten stamps and four Triumph vanners. They stopped saving free gold and make concentrates altogether. The concentrates run very high, from \$350 to \$400 a ton and they make a large amount of concentrates. The water gives trouble in sinking the shaft, but the ore is good.

The Annie is running its ten stamps and three six foot vanners steadily, and they are piling up concentrates in great shape, waiting for the roads to get good. Judging from the looks of the amalgam on the plates the product will be a big gold brick. A rich strike was made in the bottom of the shaft at a depth of 200 feet. The ore is sulphuret and shows free gold.

The Eugenia mine has been timbered up in fine shape with square sets, and preparations are being made to mill the ore on the dump. It carries from \$12 to \$14 in gold. There is

a solid ledge of from three to four feet in the face of the tunnel.

The Henrietta mill started last week, it has twenty stamps and eight Frue vanners. Managers have put on a full force of men, besides letting several leases. These lessees will get their ore treated at the company's mill. The ore is richer and the mine looks better than it ever did. A great deal of first class ore is shipped from this mine. Although the milling ore plates well, it is the heavist concentrating ore in the camp.

The Jessie mill is running ten stamps and four frue vanners night and day. Superintendent Doran is having the other ten stamps fixed up and will have them ready soon. The greatest output of value from this mill is free gold, although it is a steady shipper of rich concentrates.

There was a contract let on the Yavapai to drive the drift 150 feet further. This mine is expected to increase the output a great deal.

(Extracts from Phoenix Gazette.)

It is reported that Joe Dobson and partner have made a rich strike, east, a short distance from the Rover, near Phoenix. Those who have been to see the new find say it is one of the biggest mines at the grass roots ever discovered in Arizona. Samples show heavy, coarse chunks of gold all through the rock, indicating that it will go high in the hundreds.

One of the best developed mines in the vicinity of Phoenix is the Relief, but sixteen miles from that place, owned by Gen. Hamlin. On this 800 feet of work has been done. This claim was located five years ago by Sam. T. Webb, being at the time the first mine found with gold in granite.

Lawyer P. B. McCabe, of Tempe, has just consummated the sale of the Standard mine and Silver Reef mine and mill to O. L. Lass, the well known mining man, for the consideration of \$75,000. He went to Casa Grande from Tempe, February 6th, to make final settlement and deliver the property. The mill was purchased from St. Louis parties last fall. These mines are located near Casa Grande, and are considered excellent property, on which much development has already been done. The purchasers will begin work immediately.

Pat Sullivan and Mike Kelly were in Phoenix, Arizona, last week, from Fools Gulch, where they have for some time been working, Mr. Kelly being a millwright and Mr. Sullivan a carpenter. The mill is now completed, and for the past two weeks has been running quite satisfactorily on ore that is of good grade. From sixty to seventy tons a day are milled. About 150 are on the payroll of this company. Fools Gulch is the rolling camp, and the Planet Saturn mine is one of the great properties of the territory. The little town is one big store, a good boarding house, six saloons and is growing daily, and many are prospecting or developing in the hills near by, making Fools Gulch headquarters.

Hull & Houston have their ten stamp mill on the Agua Fria completed all but the Frue vanners, which have not yet arrived. This mill will be driven by a thirty foot overshot water wheel, and is very complete and well built. It has two Challenge, Grizzlys' rock crushers and five large iron lined ore bins, and twelve foot copper plates.

The McKinley mine, a new find about one mile below the Silver Belt looks very promis-

ing. The ledge is two feet wide and shows some free gold and sulphide ore that looks well for only ten feet deep.

W. N. Staley, who devoted six months of last season to an investigation of the immense fine gold placer bars on the San Juan river, was in Flagstaff last week, awaiting the arrival of twelve tons of machinery, which he will ship to the river to use in operating bars in the old Gable camp section. Mr. Staley represents San Francisco capitalists, who are well pleased with tests thus far made and feel well assured of satisfactory results from an economical handling of the ground on a large scale. The company will expend at least \$25,000 in the latest improved machinery for fine gold saving and in development. Trials thus far show a range in the value of the gravel of from 50 cents to \$4 per yard, a grade that certainly justifies the sanguine expectations of Mr. Staley and his associates.

Alex McLaren is in Prescott from Briggs, where he and Mr. Taylor are doing development work on their Monarch mine, a claim on the celebrated Monarch ledge. The ledge in the Mammoth is 150 feet wide with an average assay of \$10 gold. The ore is not free milling. Mr. McLaren reports that a shaft is being sunk on the Boaz to develop the mine and secure water. Shackelforth & Marsh are at work on the Fortuna; Frank Fenton is doing considerable work on the Monte Christo. Parties are working the old Banta mine for an interest. Some years ago Portuguese Joe took from this mine some remarkable rich gold ore.

At the Bald Butte mine last week the ledge was cut at a depth of 127 feet, at an angle of sixty-five degrees, in the face of the tunnel 241 feet in. The ledge holds its surface value.

## CALIFORNIA.

## INYO COUNTY.

## Mining at Panamint.

While active work is being pushed in the immediate vicinity of Randsburg, many men are vigorously prospecting the country east of Randsburg in what is known as the Slate Range and Panamint districts.

The Panamint country has long been known as one of the richest mineral sections of California, and while it was worked many years ago, producing very rich ore, the country has been very much neglected on account of its inaccessibility. In the early days when the mines were being worked the Indians were troublesome. They killed many miners, and finally destroyed the mills and drove all the white people from the country.

The quartz ledges are said to be large, well defined and exceedingly rich. Water and lumber are more plentiful than at Randsburg. Parties just in from the lower Panamint, where they have been working on the old Armagosa mine, owned by Los Angeles people, bring good news of a rich strike in this mine. They say that they have opened up a six-foot vein, the ore running by mill test, \$115 a ton. This mine is one of the old timers and has a wide reputation. It is well known by all old-time mining men, having been worked in the early fifties.

The first quartz mill ever erected in Southern California was hauled from San Francisco by wagon and placed on this property. The mill was very crude, being built mostly of



wood with iron shoes and dies. The freight cost 25 cents a pound. At this time forts were built to protect the men from the Indians. The ore produced from the mine at that time was fabulously rich. Much gold was produced up to the time the mill was destroyed by the Indians. Since then the mine has been closed down until the present owners took hold of the property. They intend to build a mill and start up the mine. The vein just opened shows permanency and richness. To the north of the Armagosa mine is the Confidence mine. A large plant of machinery has been placed on this property.

D. C. Lane, of Pomona, signed papers Monday, Feb. 8th, which conveyed his mining interests in Inyo county, consisting of the Last Chance, No. 2, Southwest and Sunshine mines, to a syndicate of Pomona capitalists for \$80,000. This group adjoins the old Silver mines of Darwin, which were famous in pioneer days. The mines are very rich in gold, silver and lead. The property was purchased by Mr. Lane two years ago, since which time he has worked it at a profit of about \$1,500 per month. The new syndicate will at once put into operation a 10 stamp mill, and will develop on a more extensive scale than before.

J. W. Kelly has taken a force of men to commence development work on two groups of copper claims near Saline Valley. The first group consists of the Copper Wedge, Tip Top, Copper Star, Copper King, Copper Queen and Clipper. The other mines include: Golden Eagle, Bismark, Bryan, Excelsior, Fairview, Standard, Butte and Summit. Assays from the Copper King, Star and Tip Top show respectively 8 to 60 per cent, and 26 per cent commercial copper. All of these claims carry more or less silver, with thousands of tons of ore in sight.

## KERN COUNTY.

J. R. Ellis, of Frazier Valley, has sold his interest in the Rademacher to the Downing Mining Company of Visalia. They are working twelve men, running a crosscut, and have cut through 20 feet of good ore. They will sink a couple of shafts. The proposition for sinking for water is very encouraging. They are down 112 feet. So far water has not been struck, but the ground is very damp.

J. W. McNitt is milling thirty tons of rock at the Visalia Company's mill at Garlock.

Thirty placer claims in the neighborhood of the St. Elmo mine have just been sold for \$5,000. The claims are said to be good ones. Other mining sales in the same section will be made as soon as the interested parties can reach Randsburg to have the deeds drawn up.

## KERN COUNTY.

Persuant to call, on Feb. 15, 1897, a miners' meeting was held at O'Brien's camp, in Secret canyon, Kern county, to take action on the formation of a new mining district. The meeting was organized by the election of W. S. O'Brien as chairman and George Aitken secretary, and the appointment of a committee of three to draft by-laws.

On motion, voted, that a mining district be formed known as O'Brien Mining district, the boundaries to be as follows: Commencing at the mouth of Jawbone canyon and running

in a northeasterly direction to the south boundary line of Red Rock Mining district, hence in a westerly direction to the summit of Piute range, hence southerly along the summit of Lead range to the north boundary line of Mojave Mining district, hence following Lead line to the foothills of Mojave valley, hence running along the base of mountains in a north-easterly direction to place of beginning.

The Committee on By-laws reported the following, which on motion were adopted:

## BY-LAWS.

1st. In all matters pertaining to the location of mining claims, water rights, as mill sites, with labor and assessment work thereon, this district shall be governed by the mining laws of the United States and the laws of the State of California.

2d. A district recorder shall be elected annually to serve for the term of one year, whose duty it shall be to keep a true and correct record of all notices of locations. We shall call all regular district elections by posting a notice twenty days before such election in at least three conspicuous places in the district, and also special elections or meetings in the same manner, when a petition for the same shall be presented, signed by not less than five claim owners of the district. He shall also keep a record of all regular miners' meetings and may, when necessary for the transaction of business, for whose official acts he shall be held responsible while in such employ.

3d. The recorder shall procure suitable books of record for the use of his office, and shall receive for each notice filed for recording a fee of one dollar, and for each certified abstract of title one dollar and fifty cents.

4th. All notices of mining locations, water rights, mill sites, or other papers pertaining to the mining interests of the district, shall be filed for record within thirty days after date of location.

5th. None but actual claim owners, having claims on record, shall be qualified to vote at regular miners' meetings on questions concerning individual mining interests.

6th. These by-laws may be added to, amended, or repealed by a two thirds vote of any miners' meeting duly called for that purpose.

Nominations were made for recorder, and a ballot being taken George Aitken was declared duly elected to that office.

On motion, voted, that a copy of the proceedings of the meeting and the by-laws be sent to the *Randsburg Miner* and MINING AND METALLURGICAL JOURNAL for publication.

On motion adjourned *sine die*.

W. S. O'BRIEN, Chairman.  
GEORGE AITKEN, Secretary.

## Caliente Items.

W. E. Rogers of Amalie returned from San Francisco last week and is making preparations to work the Amalie mine on a large scale.

The recent rains have made the Kernville road very bad and have washed out the Amalie road which makes it impossible for heavy loads.

Ferris' brothers are erecting a house and barn at Amalie and making preparations to work their mines in that district, adjacent to the Amalie mine.

Travel to the Keysville mines is continually on the increase and good reports are coming in of recent good strikes there.

A carload of lumber from Los Angeles has been shipped in for the placer diggings at French Gulch in the Keysville district.

There are more men working in the mining country tributary to Caliente than in the Randsburg district.

The Johannesburg Milling and Water company filed articles of incorporation in the Clerk's office Feb. 10th. The objects of corporation are to buy and sell water rights and acquire and own mines. The principal place of business is Los Angeles and the term of existence is 50 years. The capital stock is \$250,000 of the par value of \$100, and the following directors of Los Angeles elected for the first year, have subscribed for the number of shares set opposite their names:

Henry A. Darling.....	360
G. H. Curtis.....	2000
G. E. Pratt.....	2
F. P. Flint.....	137
C. L. Morrill.....	1

## SAN BERNARDINO COUNTY.

## The Work at Randsburg.

W. A. Boren has returned to San Bernardino from Kramer, having met with an accident a few days since by which he dislocated his ankle, and is therefore incapacitated for work. Mr. Boren is superintendent of the supply department of the Kramer-Randsburg stage line, operated by the Atlantic and Pacific Company, and in that position he has exceptional facilities for knowing what is being done in the way of transportation into the new camp, and he speaks of this work in glowing terms.

The stage company employs about 20 men in various capacities, and Mr. Boren says they are mostly San Bernardino people. From 15 to 20 teams, six, eight and ten mules each, are constantly worked on the line, and it is still almost impossible to keep the freight from accumulating at Kramer, which is but 26 miles from Randsburg, while it is 51 to Mojave, so that the former is fast becoming the most important shipping point.

Mr. Boren estimates that there are now about 150 men employed in the mines at good wages, and that the output of the mines is in excess of the amount now being spent upon them. That is to say, that the camp is more than paying its way. At the same time, he says *The Sun* is right in advising people not to go there looking for work, unless they have money to sustain themselves for some little time. There are more men in the camp now than can find employment.

There is one important difficulty at Randsburg, which Mr. Boren says is delaying the development of the camp, and that is the way in which the men hold claims which they have no money to work, and yet will neither sell for a reasonable price nor bond to other operators. There have been a number of men of means, or representing companies, which want to take prospects and develop them, but the owners of such claims in Randsburg refuse to part with them on any terms. —*Weekly Sun*.

Meager details have been received of what may prove to be a heavy robbery at Rose mine. Superintendent Harrison came down from the mine several days since, going to Riverside, and at that place he received a telegram from the mine to the effect that the safe had been robbed and the assay office burned Thursday night, the 11th inst.

Mr. Harrison at once went to San Bernar-



dino, and caught a freight train out to Victor, and from there hastened to the mine. While in that city, he stated that the safe contained, when he left, about \$3000 worth of bullion and amalgam. Of this, \$1000 was in gold bullion.

He also said the assay office and plant was worth \$1000, and if these have been entirely destroyed, in addition to the loss by robbery, it will amount to considerable. No farther details were obtainable.

A mining deal of more than ordinary importance has just been consummated at Oro Grande, S. S. Thomas selling a one-third interest in the Lucky Sam mine for \$500. The vein or ledge can easily be traced for a long distance on the surface, but the shaft is down only about 40 feet, with a two-foot ledge of \$40 ore.

Morgan & Decrow have just received their returns from a carload of ore shipped to Pueblo, that netted the owners \$1358.20, going over \$80 to the ton. They will ship no more ore to Pueblo, but will hereafter get their ore worked at the Oro Grande smelter and save the freight charges of \$8 per ton.

The Oro Grande Smelter company has just completed arrangements to take 20 tons of ore a day from a Colorado mining company, whose mines are situated in San Bernardino County, near Kramer. The ore is copper, carrying \$7 per ton gold, or about enough to pay working charges.

O. H. Savage, western manager for Feron & Ballou company, was asked concerning the report that he had purchased the Winnie and Yucca Tree, both valuable mines, located within a mile and a half of Randsburg, in the rich Yucca section of the Rand district, for a good round sum spot cash and had been offered a handsome profit on his investment by prominent California and Colorado mining men. "The statement is correct," said Mr. Savage. "Several parties have been figuring with me to get the property for an English syndicate, but I will soon push work with a big force, as the mines are both opened up and not mere prospects, there being fully \$15,000 worth of rich gold ore in sight, already uncovered.

#### RIVERSIDE COUNTY.

##### New Mining District.

Another new mining district has been discovered in the San Jacinto mountain section, which promises to become one of the leading bullion producing mining camps in this end of the State.

The new camp, which will be known as Caubillia, is located about fifteen miles southeast of the camp where Sheriff Johnson and Recorder Gruwell, of Riverside, are interested in mines.

In the new camp several very promising ledges have been uncovered and the whole district gives evidence of being rich in mineral veins. A couple of prospecting parties are being fitted out in Riverside to go to the new camp and if the first reports from there are verified, then a rush for the new El Dorado is likely to ensue.

#### TOULUMNE COUNTY.

##### Around Soulsbyville.

The Rappahannoch still continues to sink, the quality of the ore encouraging such a course.

The Mullen mine near Tuttletown will shortly be re-opened by Mr. John Doyle and associates.

The Black Oak mine has not been sold and its owners say it will not be for it is too good a thing.

L. A. Engelke has bonded his mining property at American Camp to San Francisco parties.

The Rawhide made its monthly clean up last Saturday, the result proving most satisfactory.

D. Redding of the Tarantula is in the east trying to interest capital in this fine mother lode property.

The Alabama has been getting through an immense amount of work of late and promises a golden future.

The new 20-stamp mill of the Santa Ysabel is being rapidly pushed, the foundation being well underway.

The Golden Gate mine has its mill again in full operation, the ditch supplying them with water having been repaired.

The Soulsby mine is turning out some exceedingly rich ore, and the stamp mill is kept busy milling the same.

The Jumper is sinking and crosscutting and the ore now being taken out is of an exceedingly satisfactory character.

Mr. Linehan, the well known mining man of San Francisco, is opening up his mine on the Mother Lode near Mormon Creek.

The Bonanza mine has a large force of men at work, and in the near future our people can look for another surprise.

The Star mine is still getting out a magnificent lot of ore and is proving a bonanza to its fortunate owners.

The Miller and Holmes mine has found the lost Knox and Boyle vein. It was crosscut on the 600 foot level. The new 20-stamp mill is well under way.

The Golden Rule is now drifting from the 500 ft. level and expects to cut the east ledge within a few feet. This mine is now equipped with electric lights.

The Confidence mill has been forced to close down on account of scarcity of wood. A few more days of fine weather it is hoped will put the roads in such condition as to enable a supply of wood being received.

The Jerrymander mine has struck a good vein of ore, and recently disposed of 10,000 shares of stock at a dollar per share. Twenty times this amount, however, could have been sold had the owners been willing.—*Sonora Independent*.

#### COLORADO.

(Extracts from Mining Industry and Review.)

##### BOULDER COUNTY.

The Calambia mine at Ward has a 25-ton lot of ore awaiting a run at the Binford mill.

The Camera reports 40 men working in the Victoria mine at Summerville, and that Charlie Davis is taking out \$10,000 worth of ore monthly at an expense of \$3000.

The recent strike in the crosscut from the 180-foot level of the Morning Star, near Ward, is developing into a veritable bonanza. This week it has grown into a streak of solid smelting 6-ounce ore, 16 inches wide.

Manager Harry Olympius reports 9 men at work sinking and drifting in the Gold King, near Ward. Drifts are being run on the 90-foot level, in which some good ore was uncovered last week. The appearance of the mine improves as development work progresses. The shaft is now 215 feet deep.

The Huckleberry mine is being developed through a crosscut from the Dewdrop tunnel, 50 feet of which has already been run toward the main lead of the Huckleberry. It is expected that in 35 more feet of work this lead will be cut at a depth of about 275 feet. Mill tests of surface ore gave values of \$10 to \$20 per ton.

#### SAN JUAN COUNTY.

Papa Probst has two men running the drift on the Louisiana at Silverton. It is now in 150 feet, and showing an inch streak of quartz that is rich in ruby silver. Assays show a value of \$600 per ton.

The Strayer Bros. are working the Senator lode, opposite the Bonner on Lookout mountain, near Silverton. The boys are drifting to get under the ore chute that crops on the surface. The ore assays  $\frac{1}{2}$  ounce gold and 128 ounces silver. They are in 100 feet.

The Butler Bros. are putting in a winter's work on their Boulder mountain claim, and have two cars of 80-ounce ore ready to ship in the spring. They report more work going on in the Cement creek district this winter than for many years past.

#### GILPIN COUNTY.

The Phoenix-Burroughs properties on Quartz hill are shipping between 60 and 70 tons of milling and smelting ore daily, and employment is given to a force of 60 men. Sinking operations were stopped this month, the shaft being now down 1000 feet, and the regular work of development consists of running drifts and stopping. The present showing of this well-known property is very satisfactory to the operators.

Sinking stopped last week at the Concrete mine in Prosser gulch, the present depth of the shaft being 1,230 feet. Plats are now being put in, after which levels will be driven from both sides of the shaft. A force of 50 men is working steadily on day and night shifts and a large amount of milling and smelting ore is being shipped, with possibilities of an increased output at an early date.

At the Penn mill 35 slow and 10 rapid drop stamps are crushing ore from the Concrete mine, and last week ore was also being hauled to the Iron City rapid drop stamp mill, which will also soon be crushing Concrete ore.

The Alger-Kansas on Quartz hill is being worked by a home pool of six persons, and sinking is being carried on at a present depth of 400 feet, their intention being to reach a depth of 425 feet, when levels will be run. The bottom of the shaft looks favorable, and some fair looking ore is being taken out, which should give average returns when carefully sorted, as the last lot shipped to the mills returned  $1\frac{1}{2}$  ounces gold per cord, and the ore was taken clear across the width of the shaft.

#### OURAY COUNTY.

Marked improvement is being shown on the property owned by Jim Bradley on Gold hill, which at present is in the hands of leaser Nelson.



On the west side of the Uncompahgre, below Ouray, the Millersburg has this week been started up with a force of four men under bond and lease to Rice and Ferris, who expect to ship in the near future.

The Brookfield Bros. are having better success with the Trout and Fisherman than have other leasers heretofore. This week they ship a car of high grade ore from the contact workings, and have an encouraging outlook for future shipments.

The Daniel Bonanza on Mt. Hayden, under lease to Pete Sorenson and others, promises to pay the leasers handsomely. Last week a car of high grade ore was shipped and two cars of second grade ore are now ready to be sent out. The men in charge of this property are experienced miners and best of all familiar with the property.

That there is a fortune, perhaps more than one, to come out of the Slide in the Paquin district, is being demonstrated by the leasers, Swaim and Johnson. They already have delivered to the Sky Rocket mill 80 tons of ore for a trial run which will be of 100 tons of ore when completed. Snyder and Ashley are in charge at the mill, and the results thus far appear satisfactory to all concerned.

#### LA PLATA COUNTY.

On East Mancos the North Star company are using every exertion to have the Tremaine mill running within the next thirty days, and the writer is of the belief that the ore will show a product of not less than \$10 per ton of old saved on the plates.

The Hayden M. & M. Co. at Durango will resume operations not later than the 1st of May, their first work to be the erection of a perfect tramway. They have vast bodies of high grade free milling gold quartz, and one of the best 10-stamp mill in the State.

Prett-Trachsler is pushing ahead their crosscut to intersect the Small Hope vein, near Durango, and are also sinking a connecting shaft on a good body of ore. The Little Kate is being systematically developed, and the results so far obtained are entirely satisfactory.

#### GUNNISON COUNTY.

The big strike in the Deacon lode, under lease to Andrew Lejune, is still the absorbing topic of Gunnison and proves richer as development continues. The vein is  $1\frac{1}{2}$  feet wide, and a carload of high grade ore is being shipped weekly with a force of only four men. This claim is an old one, located in 1879, but only last fall was the mineral struck.

The shaft on the Forest Hill mine, near Gunnison, is now down over 300 feet following a good vein of ore. Owing to the water becoming unmanageable, Superintendent Preston had his company purchase a 16-horse power boiler and large pump. When this machinery is in place, there will be no cause for further delay and development will be speedily carried on.

Superintendent Lejune has eight men at work on the Gold Cup prospecting at a depth of 600 feet for the contact which was lost at that depth by the former operators. They pushed the incline 100 feet beyond, but lost the contact entirely and worked into the hanging wall. It is expected that when the vein is opened again the mine's old time activity will be resumed.

#### CLARK CREEK COUNTY.

The water in the Topeka mine in Russell gulch, near Idaho Springs, is now down below the ninth level, a depth of over 750 feet. Some delay was occasioned on account of necessary repairs to the boiler, but they have been attended to and the work is going steadily along. Twenty men are engaged, mostly leasers, the main work being drifting and stoping in the upper levels. Some mill ore with an average value of 4 ounces gold per cord is being taken out and smelting ore is being saved for future shipment, which gave former returns of \$57 per ton. The Topeka will soon again be classed among the big producers. Henry Lowe manages the property.

#### SUMMIT COUNTY.

The Sultana is making regular shipments to Denver.

A contract for 500 feet of tunneling has been made by Ferrel, Howe and Blythe with the Jack company to cut the Columbus vein at a depth of 200 feet lower than the present working. This is a good move and will make it easier to get the ore out of the mine.

#### PITKIN COUNTY.

Peter Toomey, who is leasing block 3, north 14 on the Ella S., encountered last week a body of ore which runs 14,000 ounces in silver to the ton. The strike was made at a depth of 900 feet. The streak is small, but there is enough to make the lucky leaser rich.

A rich strike was made by Turley & Fuller week before last in the A. M. and S. company's properties on Aspen mountain. This strike yielded returns of 10,000 ounces to the ton and was made at a depth of 1,800 feet. They are still shipping.

The Free Silver shaft is down to a depth of 1,200 feet, and the lowest workings of the Mollie Gibson have reached 1,025.

The Deep shaft is now perfectly dry, being drained by the A. J., and the Cowenhoven tunnel has drained the mines above it on Smuggler mountain so that sinking can go on in these properties without the expense of pumping. The Mollie Gibson, Smuggler and Free Silver shafts have drained all the properties below the Cowenhoven tunnel. The Durant on Aspen mountain has drained the properties above it, and only about half the water flows from the rivers drained by it through the tunnel as formerly. The same is true regarding the Cowenhoven tunnel.

#### LOWER CALIFORNIA.

##### Work on the Aurora Mine Resumed.

Perhaps the most important mining move on the Peninsula, or at least in the Northern District, is the resumption of work on the Aurora mine at the Alamo. A great deal of interest is attached to this mine, its production in earlier days, which was by far greater than any other property in the district, the mineral formation, and in fact everything that combines to make Alamo a promising gold producing camp, gives the opening of the Aurora great significance, and the resolution of the new owners to demonstrate that these mines do go down can hardly be fruitless of results.

Some three weeks ago the pumps were started on this mine, and Friday, Feb. 5th,

F. M. Bradshaw, who together with Chicago associates, recently purchased the property, arrived in Ensenada. From Mr. Bradshaw it was learned that the shafts of both the Aurora and Princessa had been drained to the 150 foot level, where they are connected by a drift. Exploration work has already begun on the old works, and a number of drifts will be run. The main shaft of the Aurora has a depth of 212 feet, and as soon as the remainder of the water is removed, double shifts will commence sinking. Last week a good body of ore was struck in one of the old works, and the five-stamp mill on the property will start up immediately. This is most encouraging, and it is not improbable that the Aurora under new ownership may even beat the former record as a gold producer.—*Lower Californian*.

##### Great Copper Deposits in Lower California.

The *Western Mining World*, of Butte, Montana, publishes the following in their issue of Feb. 13th.

One of Butte's citizens, de Putron Gliddon, has recently become interested in the San Fernando Copper Company, whose mines are located in Lower California, Mexico.

The company owns a number of partially developed mines and claims on the lower peninsula, on which is located the famous Boleo mines, from which millions of dollars worth of copper has been taken, and whose shares are quoted on the Paris Bourse at a premium of over 200 per cent above par.

The San Fernando mine is near the old Mission of the same name, and from it several hundred thousand dollars worth of ore was shipped in former days when it was worked by Mexicans. Besides this mine the company owns the Franqueza, Alta, Delphina and San Mateo.

The grade of the ore is above the average, and some which was shipped to Swansea, England, ran from 27½ to 45 per cent copper, while small lots touched as good a figure as 75 per cent. A specimen recently assayed in Butte showed 26 per cent copper and \$2.80 to the ton in gold. This was from the San Fernando dump.

The property has been examined by Col. E. C. Humphreys, late surveyor general for Colorado, and from statements made by him, as well as the geological report of Professor Emmons, United States Geological Survey, and from assays taken and shipments made, it appears that this company has ore values that will compare favorably with the most prominent copper mines in Butte. The average here is about 7 per cent copper, \$3 per ton in gold and 10 ounces silver, while in the mines of the San Fernando Company, the average is about 16 per cent copper, 11 ounces in silver and a gold value nearly the same as in Butte.

The Mexican company has the advantage over the Montana company in the smaller cost of operation, which is about one-third less than in Montana.

In the past the ore has been hauled in wagons from the mines in San Carlos Land and then shipped by water to Swansea. It is said the purpose of the company is to erect a smelter for their own use. With one of modern style, the copper could be reduced to 40 or 50 per cent matte, at a cost of \$2 to \$4 per ton, and save largely on the working expenses, and add materially to the profits.

The promoters of the company and its present financial agents are the Woods Investment Company of Colorado Springs, and as this firm was the founder of the town of



Victor, Colorado, the Bank of Victor and about six or seven mining companies, among which is the famous Gold Coin, the business is in good hands, and will undoubtedly be remunerative to those who are interested in the company. It is understood that no shares will be sold in this country. We are informed by Mr. Gliddon that the shares will be listed on the Paris Bourse early next month.

An American Company has recommenced working the old gold mines of Rosario, seven leagues distant from La Paz, with every confidence as to future prospects. New discoveries of silver mines have been made in the municipality of San Antonio.

#### MEXICO.

In the district of Guanacevi, Durango, La América mine has just started up their new mill consisting of 30 stamps arranged for dry crushing, and two White and Howell roasting furnaces with pans and settlers for amalgamation.

"La Providencia" mine, situated some 140 miles west of the city of Durango, is said to be in bonanza, and "La Trinidad", located in the district of Panuco de Coronado, is being rapidly developed with most satisfactory results.

The Anita Mining Company of Guanacevi, Durango, is about to erect a smelter on their property, the prospects of which are most promising.

Through the energy and prescience of Mr. D. E. Murphy of Milwaukee, the famous old mines of Ramos located in the district of Ramos, State of San Luis Potosí, have been unwatered at a cost of about \$180,000.00 gold. The owner is now engaged in cleaning out the levels and expects soon to start development on ore bodies already known to exist. The property has some 25 shafts on it; one the "Cocinera" having a depth of over 1000 feet. There are some 60 to 80 tons of ore on the dump, the average assay of which is 104 ounces of silver and about 10 per cent. of copper to the ton of 2,000 lbs.

The biggest mining deal of the last month was the sale of the famous Rescate gold mines, situated in the Etla district in the State of Oaxaca, to some Denver capitalists whose names have not, as yet, appeared. General Ignacio Alfaro is one of the principal owners of the property, of which the new purchasers will take possession about March 1st. The purchase money cannot be learned at present, but it undoubtedly exceeds \$250,000.00, Mexican, as the owners have previously more than once refused that sum for the property.

The well known French engineer, Mr. Maurice du Chatenet, has been commissioned by rich French capitalists to examine certain mines in the State of Sonora which they wish to purchase, including the Cibuta mines.

It is reported that the famous Copalguin mine, near San Fernando in the State of Durango is about to be sold to a syndicate headed by Mr. Broderick. The price is to be \$4,000,000, of which \$1,000,000 is to be deposited forthwith and the remainder within six months if the owners after working the property during that time, are satisfied with it.

It is probable that the interest now felt in copper mines in the Republic of Mexico is greater than that ever been heretofore experienced. The increasing use of copper for electric purposes is, no doubt, responsible for the

large demands which are almost daily coming in for copper properties. In this connection it may be interesting to state that a well known German of the City of Mexico has negotiations on foot for placing in Europe a huge copper mine and expects to close the deal within a few weeks. If he succeeds in so doing the fortunate owner will be one of the richest men in that Republic.

The secretary of the Treasury of Mexico has declared the following claims forfeited:

"Ampliacion de Victoria," in the Municipality, District and State of Durango.

"Esperanza," in the Guanacevi District, State of Durango.

"La Alianza," in Canclas, District Durango.

"La Trinidad," San Sebastian, Jalisco.

"El Corazón de Jesus," Topia, Durango.

"La Vencedora," Guanacevi, Durango.

"El Rosario," San Sebastian, Jalisco.

"Dolores," Guanacevi, Durango.

"Amplificación de Peranducos," Danilla, Durango.

"El Banco," San Estéban, Jalisco.

(Extracts from the Mexican Trader.)

La Florida mill located in the district of Tasco in the State of Guerrero consisting of 10 stamps and 3 Frue Vanner concentrators, has been remodelled.

The El Oro company situated in the district of Tlalpujahua, state of Michoacan is making arrangements to erect a 100 stamp mill on their property. This is the largest gold producing property in Mexico. Mr. Salsburg has just erected a 40 stamp mill on an extension of the El Oro property.

The Santa Ana Company of Huantla, Morelos has just completed the erection of a new concentrating plant for the treatment of their ores.

The Oijela mine has just completed a railroad from the railroad station of Mapimi, Durango, on the International, to the mine, in order to take in the coke necessary to keep in operation the large furnaces belonging to the Company. This is an old mine, which has been worked to a depth of 1,600 feet.

La Valerdefia mine of Durango, owned by Messrs James F. Matthews and Company is continuing its usual heavy output.

#### NEW MEXICO.

The enterprising and hardworking young miners, Weatherby, Kitt & Banks, are still pushing development on their Florida group of mines, at Cooney. After showing up some fine ore (of which samples show a value of over \$200 per ton) on both the Neglected and the Christmas mines, while doing the annual assessment, they are again driving ahead the Florida tunnel. They have already hundreds of tons of free milling ore exposed in this tunnel.

#### Black Range Notes.

A number of teams are engaged hauling iron ore from Edwards Camp to the smelter.

Chas Bishop and H. E. Patrick have finished assessment work on the Columbus for 1897.

Prof. W. H. Hackett, of St. Louis, arrived here the early part of this week. Mr. Hackett is here in the interest of the Midnight Mining Company of St. Louis, Mo.

J. D. Bone and Carlos Lewis went up to the Venezuela mine, Wednesday, Feb. 10th, to sack a few tons of ore for treatment at the

smelter. They will have a shipment ready in a day or two.

Preliminary arrangements, preparatory to the blowing in of the smelter for its trial run, are nearing completion. Fluxing ores are now being hauled to the smelter, and when a sufficiency of these ores have been accumulated to the dry flux ores on hand, the smelter will start up. Feb. 11th, Engineer Robert Coplen put into motion the blower that is to furnish the blast to the 100 ton stack.

#### Hillsboro Mines Output.

Output of Hillsboro gold mines for the week ending Thursday, Feb. 11th, 1897, as reported for *The Advocate*:

	Tons.
Wicks.....	30
Butler.....	5
Richmond.....	35
Happy Jack.....	5
Snake Group.....	40
Opportunity.....	10
Sherman.....	10
Prosper.....	5
Eighty-five.....	10
Percha (silver-lead).....	5

Total..... 155

Total output since Jan. 1, 1897, - 1,205.

(Silver City Enterprise.)

#### CHLORIDE FLAT.

Lucas Castrillo is working the two Ikes and shipping ore to the Silver City Reduction Works.

Manuel Tailor employs nine men on the Providencia and is making regular daily shipments. The ore is mostly low grade running from 14 to 20 ounces silver per ton, but is valuable to the smelter for a flux on account of the large percentage of iron it contains. A pocket of rich ore is occasionally found which runs 200 to 400 ounces per ton in silver.

The Golden Giant mine is working thirty-five men and running the mine one shift.

The Treasure mining company is working fifty men and running the mill night and day.

#### COPPER FLAT.

The new smelting plant is nearly completed and will blow in before the first of March. Large ore reserves are developed in the mine and hundreds of tons of ore on the dumps. The owners of the property intend sinking the main shaft one hundred feet deeper, to commence at an early date. About fifty men are employed about the mine and smelter.

#### SANTA RITA.

The Chino mine was pumped out last week, by the new lessees, and a wonderful amount of rich copper ore was found in the workings. The new concern has not taken any decided action yet as to method of development, but it is expected that operations will be started in full blast within a few weeks. It was rumored that J. P. Whitney would arrive from Boston during the week and would bring with him mining operators who expected to reopen the Romero mine. This is the deepest working at Santa Rita, over 600 ft. The mine produced millions of pounds of copper in days gone by and no doubt has an abundance of



ore in reserve. Every one of the old Santa Rita mines which has been reopened thus far has proved a paying property and yet none of the big mines have been tried, but good profits have been made from working over the waste dumps.

#### GOLD HILL.

E. B. Foster, president of the Silver City Water Works, and owner of extensive and valuable mining interests at Gold Hill, was in Silver City, last week. Mr. Foster has been at Gold Hill for a couple of weeks past looking after his properties there. Test mill runs were made at Dr. Wood's mill, upon ores from the Standard and Reservation mines, and the results were very satisfactory. The Standard mill has probably started ere this upon ore from the Standard mine. Mr. Foster is highly pleased with the results from the mines and will make arrangements while here for the permanent working of the properties.

#### PINOS ALTOS.

Bell & Stephens are employing eight men on the Mina Grande. The drift from the south shaft to connect with the north shaft has been driven 275 feet all the distance in ore. The drift from the north shaft running south to connect is in 60 feet. This leaves 209 feet yet to be driven to connect the two drifts total distance between shafts 544 feet. Sufficient ore is being extracted to leave a handsome profit over expense of development. The Bell and Stephens mill is running steadily on ore from the Pacific.

There is no change in Mountain Key since report of last week. Twenty men employed on upper levels. The company has not started to pump out lower levels yet but will commence to drain and open the deeper works before March 1st.

#### BLAND NOTES.

The Washington mine continues to ship ore to the smelters.

Messrs. McBrearty and Warlan moved over to Colla canyon during the week to work the Unknown.

W. D. McCoy is doing some extensive work on the claim which covers the ground upon which his house stands.

Thomas Benson has gone over to Colla canyon to resume work on the Puzzle, a claim which looks better with development.

The owners of the Little Mollie calculate that they will have but 15 feet more to drive before they will encounter the richest lead of the distinct four on that valuable property. The lower tunnel is in 90 feet to date, and when the main lead is cut it will be about 105 feet which will also be the depth gained.

It is the belief of everyone in the district that Colla canyon is going to soon make a stride toward an unusual amount of mining. The indications are favorable in that direction, and the Colla is a mighty rich and expansive field for extensive mining operations, and cannot detract from the known value of the many mines of the canyon in which Bland is situated.

The Black-Girl is showing up immense. The lessees struck the main lead, a six foot vein of high grade gold quartz, the first of the month, and a few days later broke into a pocket from which a fine specimen containing

wire gold was taken. From assays made on the Black Girl some time ago the gold greatly predominated the silver values, and it is an indisputable fact that this mine is likely to become an exceedingly valuable one.

J. T. Stewart, the well known mining man of Aspen, and James A. Carlisle, one of the gentleman interested in the Victor group of mines in Colla canyon, arrived last week in Bland and spent a few days in examining the property mentioned. The object of their visit is in connection with the sale of the Victor. If Mr. Stewart's opinion of the mine comes up to what is expected, the property is likely to be bought outright by the latter gentleman.

Henry Woods, one of the firm owning the Lone Star and Albemarle group of mines and other valuable mining property in the Cochiti district, returned to Bland from Denver, where he had gone to confer with Thomas F. Lowthian and Judge Charles Toll, other owners of the property mentioned, regarding the sale of the Albemarle group to Howell Hines of Cleveland, Ohio. The deal has not yet been settled, but it is certain to go through as soon as S. P. Mahan, who had been "experting" the camp for close upon two months, returns from Los Angeles.—*Bland Herald-Weekly*.

It is rumored that a mining deal of very large proportions is on foot, upon the consummation of which many gold properties within twenty-five miles of Socorro will change hands. The men on the purchasing end of the deal are highly pleased with the properties, and are ready to close as soon as certain agreements can be reached.

The Opportunity, Percha and Eighty-five mines paid off at Hillsboro last week; about \$2000 were distributed. The Happy Jack, Prosper and Golden Era mines will square their pay rolls on the 15th inst. Some \$1,500 will be paid out.

#### The Cerrillos Smelter.

Howard Vaughn, cashier of the 1st National Bank at Santa Fe, who is interested with Capt. Balue says that there is no doubt of the erection of the smelter at Cerrillos. The matter now merely hinges upon the proper site for the projected plant, and one is assured that will place the smelter in a convenient situation for the deliverance of ores from the Cochiti mining district. The work will undoubtedly begin by the end of February, and in connection with certain other projects now on foot for this district and vicinity, this particular part of the territory of New Mexico, within a radius of fifty miles, will become an extremely prosperous center of mining and milling operations.

#### Miners at Madrid Strike.

CERRILLOS, N. M., Feb. 1st

The coal miners and company men employed in the five mines of the Santa Fe company at Madrid went out on a strike today. A few days ago Superintendent Duggan posted notices announcing a reduction of wages of engineers, rope riders, drivers and some others of the company men in all the mines, taking effect today. The cut varies from five to nine per cent. A new scale was also provided for the miners in the Cook and White mines, Nos. 1, 2 and 3. Heretofore, these miners were paid 75 cents a ton of 2,400 pounds of mine run coal. The new scale offered is 85 cents a ton of 2,000 pounds of screened coal, free from dirt or slate. The

coal from the Cook and White mines is soft and breaks up so that the men claim they cannot make living wages at the new scale. The wages for driving stopes and entries were also reduced. At the same time the company raised house rentals one and two dollars. A meeting was held this afternoon at which nearly all the miners were represented, and it was almost unanimously voted not to accept the reduction or the new scale. The scale for mining in the White Ash and hard coal mines was not changed, but the miners went out with the others and the war is on. The strike involves 450 workmen of all classes, and directly affects the entire population of Madrid, about 1,200 people. The company will not easily recede from its position, claiming that the prices paid miners are the best of any camp in the United States except one.

#### NEVADA.

Another rich strike is reported on the old Comstock in Nevada, in the Consolidated California and Virginia, of black sulphurets, like the big bonanza deposits. From the report of the superintendent we extract the following: "Opposite the north drift the south drift has been advanced 20 feet. This drift when advanced 25 feet showed a streak of ore 15 inches wide on the west side of the drift and 18 inches wide on the east side. Samples taken across the face of the drift from the streak assayed \$72.05, \$74.50 and \$381.40 per ton. Along the east side of the drift, 5 feet north from the face, there is a width of 18 inches of ore assaying over \$200 per ton. We have extracted from this streak of ore 3 tons of ore assaying \$217 per ton, which still remains in the drift. Work here has been suspended, as we cannot remove the ore until an upraise connection has been made with the 1,650-foot level, which I estimate will be in four weeks."

1000 level—The south drift started from the west crosscut at a point 124 feet in from the top of the upraise from west crosscut No. 2 from the north drift from the Con-Virginia shaft station has been extended 22 feet, passing through porphyry, clay and quartz, assaying \$1 per ton; total length, 57 feet.

1,650 level—On the ninth floor in the stope at a point 100 feet east and 25 feet north of an east line from the Con-Virginia shaft the incline upraise has been carried up 16 feet, passing through quartz and porphyry and narrow streaks of ore, assaying the top of the opening from \$2 to \$6 per ton; total height, 32 feet above the 1,650 level. Around the foot of the upraise, and upward 20 feet, we have extracted 18 tons of ore assaying \$41.14 per ton.

1,750 level—From the twenty-sixth floor at a point 118 feet in from the mouth of the west drift, a north drift has been started and advanced 30 feet, passing through porphyry showing streaks of quartz of low assay value.

Opposite the south drift the north drift has been advanced 28 feet, passing through vein porphyry streaked with quartz, assaying \$2 to \$3 per ton.

From the tenth and eleventh floors on the east side—above the sill floor of this level—at the north end of the stopes in old ground of former workings and from the sixteenth floor on the west side of the stope, we have extracted 20 tons of ore, the average assay value per samples taken from the cars in the mine was \$40.49 per ton.



From the west drift at a point 190 feet in from its mouth a north drift has been advanced 30 feet, passing through porphyry streaked with quartz of low assay value; total length, 69 feet.

No work has been done during the week in the south drift where the streak of good ore was cut last week.

We have completed filling the open space in the stopes between the eighteenth and twenty-sixth floors, and are now putting in a stone and cement bulkhead in the west drift from the old stope.—*Virginia City Enterprise*.

Chinese and white men are working on the Pro Bono Publico placer ground at the mouth of Six Mile canyon, near Virginir City, raising gravel to the surface through shallow shafts sunk in the gravel at several points. So far no bedrock has been found and is not likely to be at the depth that can be sunk by windlass power, as a shaft sent down 113 feet at the placer where they are now operating, eighteen years ago, failed to reach bedrock. The entire plain east of town for a distance of five miles east of the mouth of the Six Mile canyon, is a gravel bed of unknown depth, the bedrock not cropping out at any point on the plain.

At Cheery Creek V. G. Shephard has leased and bonded one of his mines in Granite district to Colorado parties, who commence operations at once.

Arrangements have been made by the Ben Hur Co., of White Pine, to ship boiler and other machinery for a 10 stamp mill, to be delivered on their mines.

Contracts have been made by the North Mountain company of White Pine for a boiler and other machinery.

A good strike of cinnabar ore has been made in William Burke's mine near Steamboat Springs.

A great deal of ground has been opened up by the developments this winter in the Logan and Hully mines, Como district. The owners have found a good body of ore and found out also how to work it.

#### UTAH.

(The Argus.)

A movement has been started to erect a custom mill at Silver City, in Juab county.

An airdrill has been started in the prospect shaft of the Apex in Mammoth Hollow, also in Juab county.

The Sacramento at Mercur will pay another dividend of half a cent per share, or \$5,000, on February 20th.

A shipment of thirty-three bars of silver bullion, containing 18,644 fine ounces of silver, was made from the Ontario at Park City last week.

E. H. Buchanan, formerly editor of the *Park City Record*, is now in charge of operations on the Picnic group in Silver City, Juab county.

A very fine ledge of good carbonate ore has been discovered by John Martin of Park City, about nine miles from Oakley in Summit county on the Weber river.

A second payment of \$20,000 has been made to J. S. Lakin for his interest in the Sacramento in Mercur. There is still \$45,000 due on the purchase.

At a depth of sixty feet in the incline start-

ed from the lower tunnel level in the Frisco at Bingham, a vein of good lead ore, two feet thick, has been encountered.

The Constellation, an old Park City producer, is to be rejuvenated under the management of Henry Sutton, and systematic prospecting and development is being prosecuted.

Recent development in the Charlie Ross claim on the Mercur West Dip, proves the existence of a vein underlying that on which the Daisy is located, and with a strike and dip parallel to the original vein.

It has been announced that the February dividend of the Bullion-Beck will be double, to which there is a probability of \$20,000 being added, making a total for the month of \$50,000, or fifty cents per share.

The Eureka Hill company has commenced to lay its pipe line from the old Shoebridge mill site, recently purchased, to the Eureka Hill mill. This new supply will furnish sufficient water to run the 100 stamps at all times.

The dimensions of the ore body encountered some months ago on the 800 level of Bullion-Beck have not yet been defined and every effort to do so have increased its magnitude. It is the biggest ore body in the history of the mine.

In the lower tunnel being driven to intercept the Valeo vein in Park City, stringers of ore similar in appearance and value to that being mined in the upper workings have commenced to seam the formation, and it is believed that the vein is near at hand.

The Anandale shaft in Tintic which lies adjacent to the Emerald and is owned by practically the same people, has encountered some fine looking copper stain at a depth of sixty-five feet, and it is believed that the workings are close to an ore body.

L. E. Riter of the South Swansea at Silver City, was in Salt Lake during the week, and reports that the pressure on his ore bins had been reduced by a shipment of five cars. He will store the ore at the sampler until better treatment charges are offered.

R. D. McDonald, who has had charge of operations on the Broad Gauge mine (the old Dial,) in Bingham, reports that the lower tunnel cut the vein and developed such a strong flow of water that work had to be abandoned before the vein could be prospected.

Manager James McGregor of the Crescent Company in Park City, is in Michigan conferring with the other directors as to the advisability of resuming work at the mines. A number of parties are taking ore out of the Crescent under lease, but the company's force consists of but four men.

C. W. Thompson of Park City has located some valuable claims in the Raft river mountains in Box Elder county. The district is the location of the Century mines owned by Thomas Busby and Del Wilson of Salt Lake city, and from which recent assays revealed the presence of seven ounces in gold per ton.

#### The Geyser-Marion Consolidation.

One of the most gratifying pieces of mining news that has recently been promulgated is the consolidation of the conflicting interests of the Geyser and Marion companies at Mercur. The two companies have already expended a fortune in litigation that has been fruitless to themselves and derogatory to the development of the district, and this fight was about to be resumed when the Angel of Peace flapped his white wings over the heads of the combatants, and it was all off. Under the

terms of the compromise and consolidation the two companies are to be incorporated as the Geyser-Marion Gold Mining company, with 300,000 shares of stock of a par value of \$5 per share. Of these, 200,000 will go to the Geyser interests and 100,000 to the Marion, and both companies will be represented in the directory and on the official roster. The two properties represent some of the choicest ground in Mercur, both are equipped with mills, and now that the war is at end a splendid production record should be the result.

## GENERAL NEWS.

The California State Mining Bureau has issued its thirteenth report of the State Mineralogist for the two years ending September 15th, 1896. It contains a great many excellent maps, diagrams and half-tones of some of our great California mining properties. It is a treatise on the methods of mining and treating ores as practiced in this state. There are over seven hundred pages, and is full of valuable statistics.

It has taken the larger part of two years, and a large staff of competent field assistants, to gather the information for the work, and on the whole, it does the state mineralogist, J. J. Crawford, credit. Any citizen of this state may obtain a copy of the report free, by sending seventeen cents (for postage) with their application to the California State Mining Bureau, at No. 24 Fourth street, San Francisco, California.

#### Gold Product '94, '95, '96.

The gold production of the United States and Territories, according to figures of Director of the Mint Preston, compares with 1895 and 1894 as follows:

	1895.	1896.	1894.
Alaska.....	\$1,249,000	\$2,706,000	\$1,115,560
Arizona.....	2,418,000	1,333,000	1,784,485
California.....	16,500,000	14,880,000	13,570,397
Colorado.....	13,000,000	13,120,000	9,491,514
Idaho.....	2,474,000	1,779,000	2,081,281
Montana.....	4,440,000	3,888,000	3,631,410
Nevada.....	2,965,000	1,652,000	1,187,819
New Mexico.....	525,000	480,000	567,751
Oregon.....	1,300,000	890,000	1,422,654
South Dakota.....	4,650,000	3,870,000	3,290,100
Utah.....	1,920,000	1,370,000	868,081
Washington.....	382,000	333,000	195,100
Appalachian.....	306,000	.....	273,072
Totals.....	\$54,119,000	\$46,710,000	\$29,500,000

Mr. Preston believes 1896 world's gold production will be \$215,000,000, an increase of \$12,000,000 over 1895. The world's gold production has more than doubled during the last ten years, as production in 1886 was but \$106,163,000.

We are in receipt of Filley & Ogden's complete and authentic mining laws of British Columbia, United States and the State of Washington. It is a neat little book of about 112 pages, bound in a heavy paper cover, with the title and brief of the contents very artistically arranged thereon. It is full of practical information for the prospector, miner and investor, with complete legal forms, definitions of mining terms, etc. The book was compiled by Filley & Ogden, of Grand Forks, B. C., and can be secured by writing to them and sending fifty cents.

The Calumet & Hecla Mining Co. in 1896 yielded a total of 90,000,000 pounds of refined copper, the largest in its history.

The Atlantic Mining Co. hoisted 371,128 tons of rock in 1896 which yielded 4,894,228 pounds of refined copper.



## JEFFREY MINING MACHINERY.

The illustrations herewith represent some of the Jeffrey specialties in the line of Mining Machinery. The words "Jeffrey" and "Successful power coal mining machinery"



are synonymous and while the mining public in general are familiar with their manufacture, we illustrate herewith their latest Coal Cutter and Mine Locomotive, which are the culmination of many years of experience. The Chain Coal Cutter in simplicity, efficiency and Design is superior to all other makes and the success it has attained in the States is a marvel. The machine is operated by Electric or air power and the daily work will average anywhere from 100 to 200 feet face, the under cut being either 5, 6 or 7 feet according to the length of machine used.

The Jeffrey Mine Locomotive wherever used effect a great saving in the cost of production and the illustrations herewith show the style made by the Jeffrey Company. The one with man in center is preferred in many instances, while the one with controller on end is equally desirable. These Locomotives are used for mine as well as surface work and are designed for various capacities.

The Jeffrey Company issue a complete catalogue descriptive of their machinery which can be had by addressing them at Columbus, New York, Chicago or Denver.

Henry Moissan finds that important alloys can be obtained by taking advantage of the ease with which metallic oxides are reduced by aluminum. His general method appears to be to bring aluminum into a molten condition, and then to throw it into a mixture of aluminum filings and of the oxide of the metal which it is desired to allow. A further energetic development of heat takes place, with the result that the most refractory oxides are reduced. By means of this method Moissan has succeeded in preparing alloys of aluminum with nickel, molybdenum, tungsten, uranium, titanium and chromium. The advantage of mixing tungsten, etc., with steel is well known, and Moissan states that not only this substance, but titanium also, can be introduced into Siemens-Martin steel. Many chemical substances when heated in the electric furnace give some very astonishing results, and in some cases they become trans-

formed into minerals which up to the present have only been met with in nature.

In the gold mining districts of western Australia, particularly the Coolgardie region, the Westralian Electric company proposes to follow the example of California and Colorado, and apply electric power transmitted over long distances. At the Rand Central Electric Works, which applies electric power to the gold mines of the Rand, South Africa, the capacity of the plant, about 2000 H. P., has been applied for at an average of about £45 per H. P. per annum delivered, including wires and fittings. There are four three-phase generators in position, direct driven by vertical triple expansion marine type engines, having a maximum brake H. P. of 1200. Each dynamo weighs eighty tons and is constructed in four pieces. Eight multi-tubular boilers, with 200 tubes each, supply the team. Each is of 600 H. P. and has 3,300 square feet of heating surface. Only three sets of the plant will be worked at first, the fourth being held in reserve for a time. Some of the mines supplied are situated over twenty miles from the generating station. Current is generated in the dynamos at 700



volts, is raised by means of step-up transformers to 10,000 volts, and at the mines is reduced by step-down transformers to 120 for lighting and 240 to 500 volts for motor work. —Mining and Scientific Press.



## PERSONAL-NEWS ITEMS

Harry B. Adsit, formerly of the Desert Queen mine near Banning, has been appointed general superintendent of the Tomboy mine at Telluride, Colo.

Job M. Evans, formerly of Kingston, N. M., is at present in the mining business at Mercur, Utah.

Frederick O. Parvin, of Cedar Rapids, Iowa, has gone to Mexico where he will enter the employ of the Guggenheim Smelting company at San Luis Potosi, where his brother holds a responsible position.

W. H. Southerland left Tucson, Arizona, for his home at Dripping Springs the fore part of the month. He is interested in some of the largest and most promising copper mines in the territory.

John Byrne of Butte, an experienced miner, has been appointed State Mine Inspector of Montana by Governor Smith.

The members of the Wicks mining company are expected at Hillsboro shortly from Chicago.

I. T. Stoddard, the well known mining man of Stoddard, Ariz., has been on a visit to Phoenix.

T. J. Nolton is now superintendent of the Klamath Plume and Mining company in Siskiyou county, California.

Col. Wood, superintendent of the American mine at Nogal, returned from the east and was in White, Oaks, N. M., the fore part of last week.

George Hamlin came in to Phoenix, Ariz., from the Relief mine the 12th inst.

Joe Schlosser, of Georgetown, N. M., was in Silver City the first of the month.

Frank W. Page, of the Summit Mining company, which recently paid \$50,000 for the Fortuna mining claims, near Nevada City, Cal., will put an electric plant thereon.

Si Drullard, of Bakersfield, Cal., has returned to the desert mines, and says he intends to make some new and rich discoveries.

C. E. Conway, agent of the Silver City Reduction company of Silver City, N. M., went to Kingdon the first part of this month to inspect some of the mine dumps there with a view to purchasing them for his company.

Don Emiliano Ibarra and brother Everardo, together with F. Carrillo, V. Legaspy and A. Bareno, returned Wednesday, Feb. 10th, to Ensenada, Lower California, from the Calmalli mines.

James Crittendon, of Copper Flat, N. M., was in Silver City the fore part of the month.

Prince Fedor Shadrin, who owns large placer properties in Russia, and M. Shagoloff and M. Krasinichoff, who are engineers, have been looking into the methods in vogue in the hydraulic mines of Trinity county, California.

Gay Lombard arrived in Ensenada, Lower California, Feb. 11th, from Agua Dulce district and reports mining progressing nicely at the camp.

V. Tremain, secretary and treasurer of the Prospective Mining and Machinery company of 127 First street, San Francisco, Cal., was a caller at the JOURNAL office the 15th inst.

N. S. Berray, superintendent of the Copper Flat mines, was in Silver City, N. M., Feb. 11th, on business.

Wm. Gregory, Jr., of Redlands, Cal., the agent of the White & Middleton Gas, Gasoline or Distillate Engine for Southern California and Arizona, was a caller at the JOURNAL office the middle of the month.

George Dickinson came in the 11th inst. to Silver City, N. M., from Malone camp where he is working some promising properties.

O. H. Savage, western manager for Feron & Ballou company, has returned to San Jose, Cal., from his vacation of several weeks spent in Southern California, particularly at Randsburg where he interested himself in some mining propositions.

Prof. W. H. Hackett, of St. Louis, arrived in Chloride, N. M., the early part of this week, in the interest of the Midnight Mining company of St. Louis, Mo.

J. C. Rankin, the mining man, has lately returned to Phoenix, Ariz., from a trip to Chicago and New York, covering a period of more than six months.

Albert Nelson arrived in the Greenhorn mountains, Kern county, Cal., from Sacramento last week to look after his mining interests in the above mountains.

E. B. Foster, the principal owner of the Standard mine at Gold Hill, was in Lordsburg, N. M., from the mines the 11th inst.

J. A. White, who is interested in some mines in the Queretaro district, in the state of Queretaro, has left the City of Mexico to look after his interests above mentioned.

A. M. Wells, the Denver mining man, has again returned to Tombstone, Ariz., to invest in some Arizona mines.

H. J. Nichols, an English mining expert, has just returned to Lordsburg, N. M., from a visit to Gold Hill where he went to report upon the Standard mine. Mr. Nichols has left for London, England.

John McRae, well known mining man from Sultepec, Mexico, has been on a visit to the City of Mexico the last week.

H. R. Knight, who has been to Tombstone, Ariz., returned to Los Angeles the first of the month.

John McMillan, of Pinos Altos, N. M., was in Silver City the first part of February.



C. R. Stevenson, the well known mining man of the City of Mexico, has left that place for Queretaro to examine some properties in that district.

J. G. Hardy, assayer for the Mexican Gold and Silver Recovery company of the City of Mexico, was in the City of Chihuahua last week on business for the company.

W. H. Wren, the mining man who has been at Pearce, Ariz., looking at the Gold Cliff properties, returned to Los Angeles the first part of the month.

T. J. Stewart, of Aspen, Colo., was in Bland, N. M., the fore part of the month examining the Victor mine with the intention of purchasing.

Ed Lineberger was in Ensenada, Lower California Mexico, from San Rafael valley, the fore part of the month. Mr. Lineberger says there is an abundance of water to handle the gravel of the Golden Dream placers, some of which are very rich.

Messrs. Metcalf and Kirk, who have lately returned to Tombstone, Ariz., from Minas Prietas, say that that mining camp is developing into a wonder. The gold product for the last two years amounted to \$10,000,000.

James A. Carlisle returned to Bland, N. M., from Aspen, Colo., where he went to confer with some Colorado capitalists who wish to interest themselves in New Mexico mining properties.

John Fallen, general manager for the Mexican Gold and Silver Recovery company of the City of Mexico, was in Chihuahua the first of last week.

F. B. Weaver has arrived in Jerome, Ariz., from Randsburg, Cal., and speaks well of the latter place.

Henry Woods, one of the firm who own the Lone Star and Albemarle group of mines and other valuable mining properties in the Cochite district, has just returned to Bland, N. M., from Denver, Colo.

Capt. J. S. McHenry went to Chihuahua City from Moctezuma last week and reports the miners and prospectors in the neighborhood of Moctezuma as doing well.

President J. A. Fleming, of the Black Warrior company, arrived in Globe, Ariz., a few days ago from Phoenix, and was gratified at the showing made in the company's mines.

S. P. Mahan, the mining expert who had been in Bland, N. M., for the last two months experting some valuable mines, was in Los Angeles last week on a visit.

Surveyor S. Simpson will leave the City of Chihuahua in a few days for Batopilas to survey mining properties owned there by several Chihuahua people.

John Brockman, a wealthy mining man of St. Louis, Mo., after a visit of several days in Tucson, Ariz., has returned to his home.

H. C. Sandifar was in the City of Mexico from Silao the 7th of this month on mining business.

James Shields, the Montana mining man, has been taking in the sights at Randsburg, Kern county, Cal., and is satisfied with the camp.

Billy Gavin, an old time Arizona prospector and discoverer of the Pine Spring on Turkey creek, which produced \$50,000 in sinking but a few feet, has returned to Prescott after an absence of two years in Montana and Idaho.

Wm. H. Kruse, of San Francisco, was in Bakersfield February 9th, en route to the Greenhorn mountains in Kern county where he is interested in mining.

Maurice Clark, the mining engineer, was in the City of Mexico last week and will probably return to Oaxaca where he has been doing some engineering, the latter part of this week.

Chas. R. Wores, the Tucson, Ariz., assayer and proprietor of the Tucson Sampling Works, paid the JOURNAL a pleasant call last week while on his way to Johannesburg, Kern county, Cal.

James H. Kirk left Prescott, Ariz., the first of the month for Mexico where he is engaged in mining.

O. O. Howard, Jr., of San Francisco, Cal., has recently arrived in the Greenhorn mountains, in Kern county, from the former place to look after some mining interests he has in the mountains.

Charles H. Peck of Denver, interested in mining properties near Casa Grande, Ariz., is in Phoenix, accompanied by William Stiles of Casa Grande.

A. J. Doran reached Prescott, Ariz., from the Little Jessie mine Feb. 5th.

C. J. Francis, of Sacramento, Cal., arrived in Bakersfield from the north Tuesday, Feb. 9th, en route to the Greenhorn mountains in Kern county, where he has some mines.

C. L. Hall, of the Mammoth mine at Goldfields, Ariz., was in Phoenix Feb. 7th.

E. B. Gage, the large mine operator of Congress, Ariz., was a visitor at Phoenix, Ariz., the 7th inst.

Alfred Tregedo, the mining expert, has just returned home to San Francisco from Wickenburg, Ariz., where he went to examine the property owned by Dr. Scott Helm of Phoenix and F. I. Kendall of San Francisco.

John Porley, M. E. of San Francisco, has just left Wickenburg, Ariz., for home. He has been doing some professional work near Wickenburg.

R. O. Crewe Reade, son of Col. Offley J. Crewe Reade, left the City of Mexico Feb. 14th over the Central for San Diego, Cal., and thence to Ensenada, Lower California, to join his father who is engaged in mining near that city.

Collins McCurdy, of San Francisco, Cal., was a caller at the JOURNAL Office last week.

B. W. Hull, a mine operator of Challes, Idaho, was in Phoenix, Ariz., last week visiting his brother Hon. G. W. Hull, whom he has not seen but once before in twenty years.

W. P. Blake, the mining man of Tucson, was in Phoenix, Ariz., the week before last on mining business.

C. L. Hartfeld, M. E., the contracting agent of the National Ore and Reduction company of St. Louis, Mo., who have just completed the large smelter at Oro Grande in San Bernardino county, was a caller at the JOURNAL office the other day.

James McClurg, one of the best known mine operators of Colorado, was in Phoenix, Ariz., having returned from a trip out in the hills where he has been looking for some investments.

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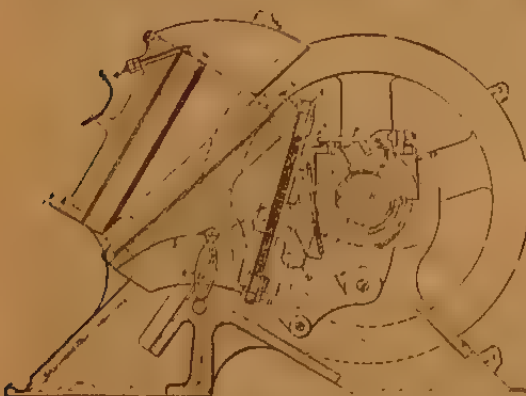
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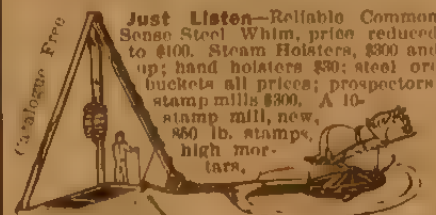
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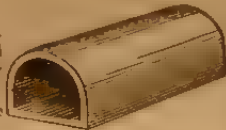
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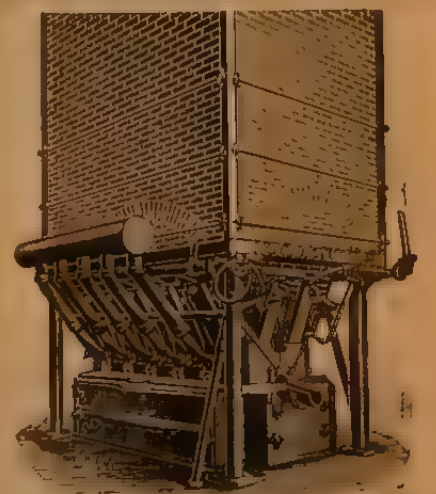
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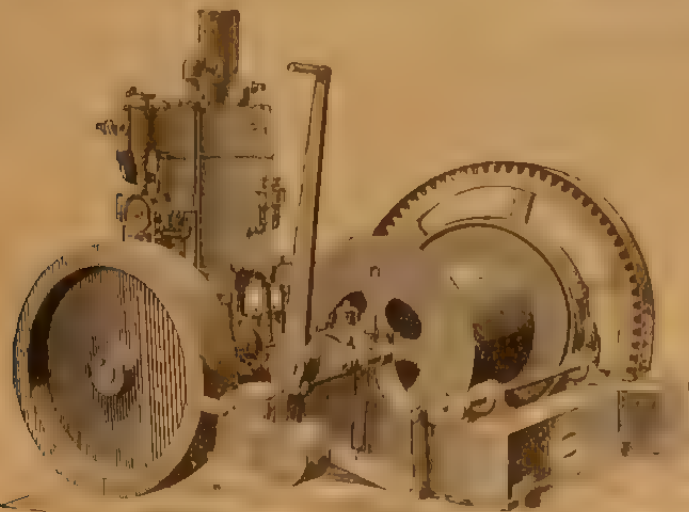
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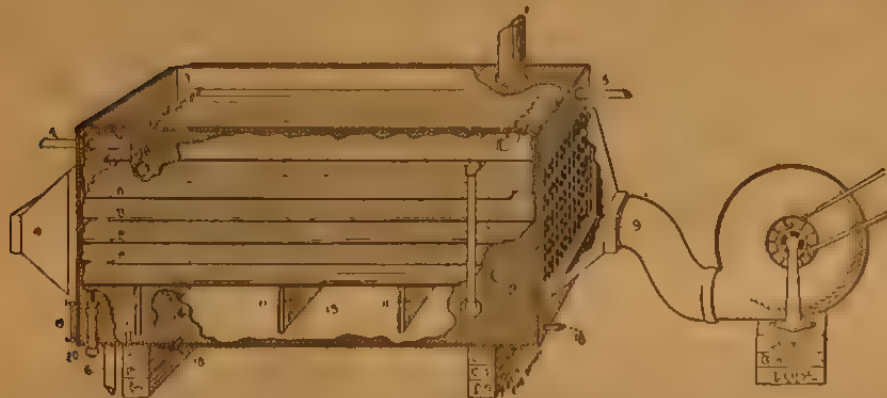


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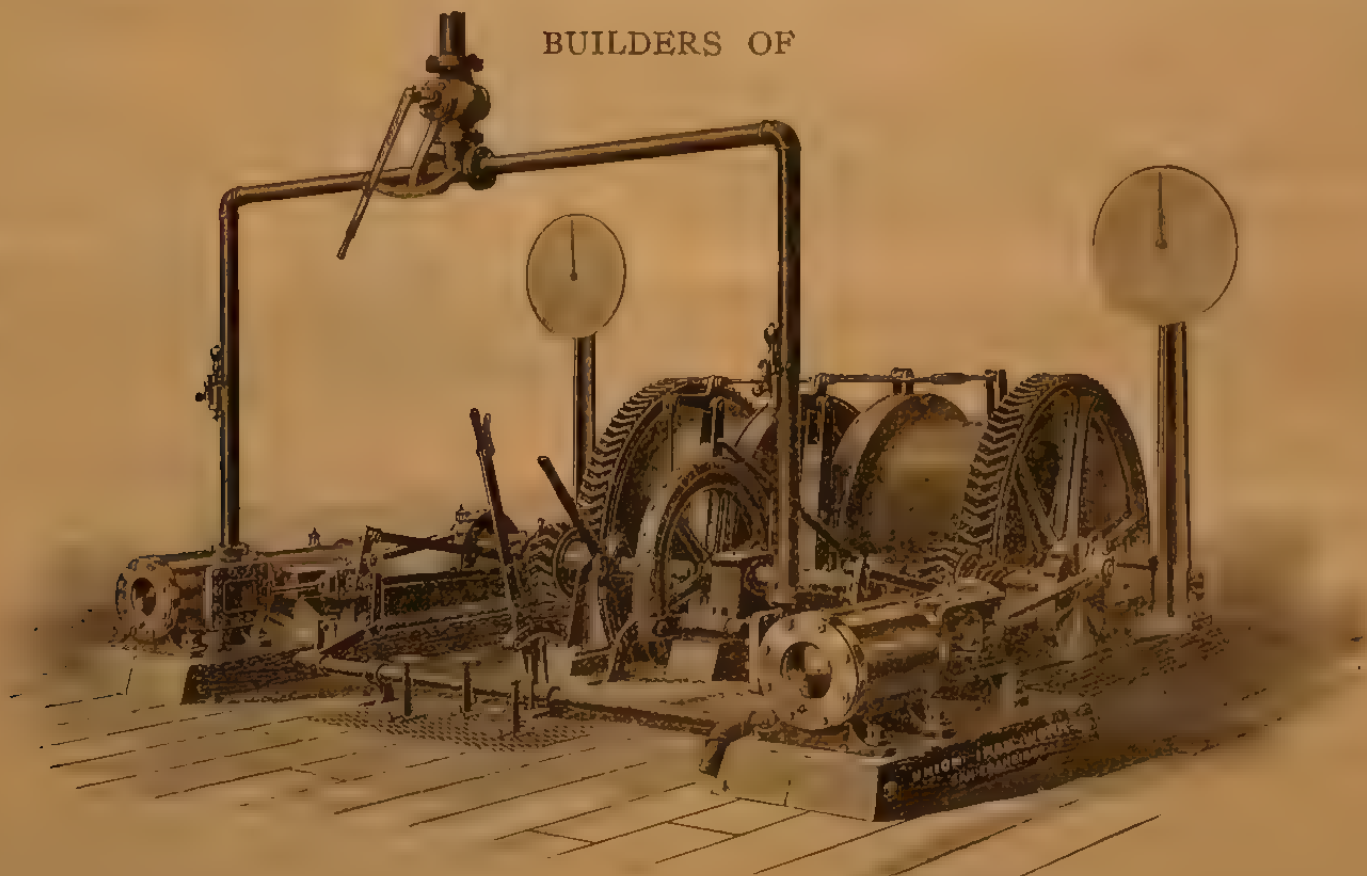
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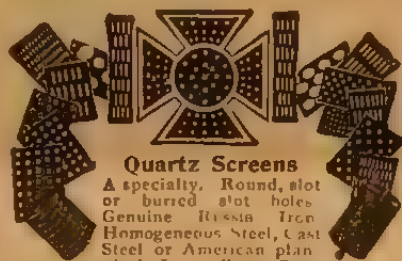
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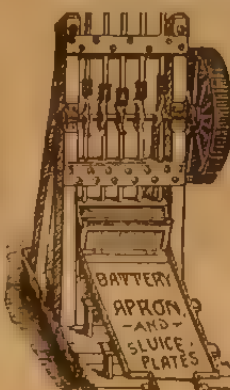
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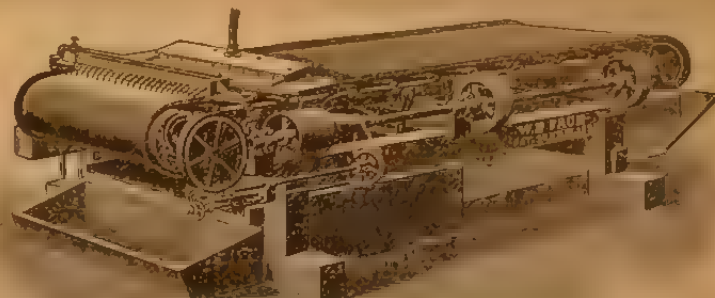
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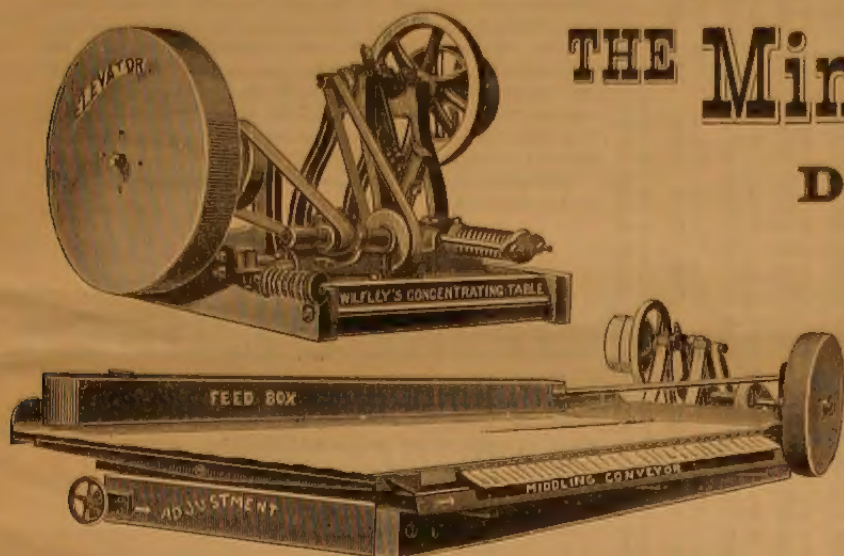


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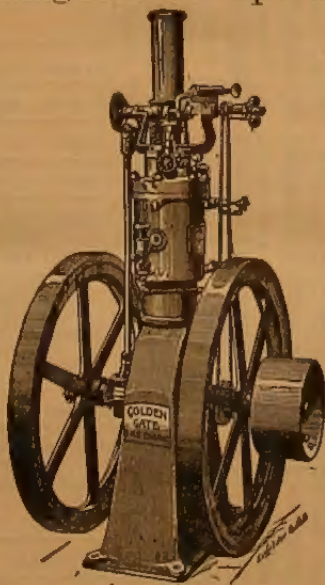
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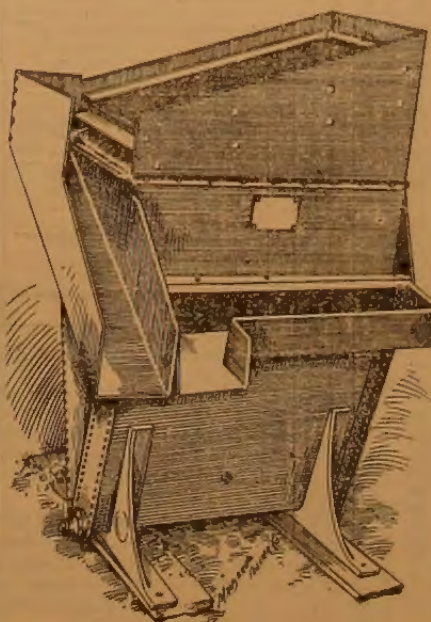
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## ATCHISON, TOPEKA &amp; SANTA FE R. R.

FROM	TO	Car Loads, in dollars and cents per ton of 2,000 lbs.			
		Ore Concentrates	Lead Bullion, valuation not to exceed \$100 per ton.	Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.	
		Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$300 per ton.	
<b>SONORA RAILWAY</b>					
Guaymas, Mex.	El Paso	10 00	1 50	3 50	
	Pueblo	13 50	5 00	7 00	
	Denver	15 00	8 50	8 50	
	Kansas City	15 50	7 00	8 00	
Ortiz, " "	El Paso	8 50	1 00	3 00	
	Pueblo	12 50	4 00	6 00	
	Denver	14 00	6 50	7 50	
	Kansas City	14 50	8 00	8 00	
Torres, " "	El Paso	9 00	0 50	2 50	
	Pueblo	11 50	3 00	5 00	
	Denver	13 00	4 00	6 50	
	Kansas City	13 50	0 00	7 00	
Hermosillo, " "	El Paso	8 50	0 00	12 00	
	Pueblo	10 00	1 50	13 50	
	Denver	11 50	3 00	15 00	
	Kansas City	12 00	3 50	15 50	
Pesqueira, " "	El Paso	8 00	8 50	11 50	
	Pueblo	10 00	11 50	13 50	
	Denver	11 50	13 00	15 00	
	Kansas City	12 00	13 50	15 00	
Querebabi, " "	El Paso	7 00	8 50	10 50	
	Pueblo	10 00	11 50	13 50	
	Denver	11 50	13 00	15 00	
	Kansas City	11 50	13 00	15 00	
Santa Ana, " "	El Paso	8 50	8 00	10 00	
	Pueblo	9 50	11 00	13 00	
	Denver	11 00	12 50	14 50	
	Kansas City	11 50	13 00	15 00	
Magdalena, " "	El Paso	8 00	7 50	9 50	
	Pueblo	9 50	11 00	13 00	
	Denver	11 00	12 50	14 50	
	Kansas City	11 50	13 00	15 00	
Imuris, " "	El Paso	8 00	7 50	9 50	
	Pueblo	9 50	11 00	13 00	
	Denver	11 00	12 50	14 50	
	Kansas City	11 50	13 00	15 00	
<b>NEW MEXICO &amp; ARIZONA R. R.</b>					
Nogales, A. T.	El Paso	5 50	6 50	8 50	
	Pueblo	9 00	10 50	12 50	15 20
	Denver	10 50	12 00	14 00	17 20
	Kansas City	11 00	12 50	14 50	18 40
Calabasas, " "	El Paso	5 50	6 50	8 50	
	Pueblo	8 50	10 00	12 00	15 20
	Denver	10 00	11 50	13 50	17 20
	Kansas City	10 50	12 00	14 00	18 25
Sanfords, " "	El Paso	5 50	6 50	8 50	
	Pueblo	8 00	9 50	11 50	15 00
	Denver	9 50	11 00	13 00	17 00
	Kansas City	10 00	11 50	13 50	18 15
Crittenden, " "	El Paso	4 75	6 75	7 75	
	Pueblo	8 00	9 50	11 50	14 80
	Denver	9 50	11 00	13 00	16 80
	Kansas City	10 00	11 50	13 50	18 00
Fairbank, " "	El Paso	4 40	4 40	6 50	
	Pueblo	8 00	9 50	11 50	14 00
	Denver	9 50	11 00	13 00	16 00
	Kansas City	10 00	11 50	13 50	17 50
<b>SOUTHERN PACIFIC CO.</b>					
Tucson, " "	El Paso	4 35	10 50	12 50	14 80
	Pueblo	9 00	12 00	14 00	16 80
	Denver	10 50	12 50	14 50	17 80
	Kansas City	11 00	13 00	15 00	18 85
Benson, " "	El Paso	8 00	10 00	12 00	13 80
	Pueblo	9 50	11 50	13 50	15 80
	Denver	11 00	13 00	15 00	17 00
	Kansas City	10 00	12 00	14 00	17 25
Steins Pass, N.M.	El Paso	8 00	9 50	11 50	12 20
	Pueblo	9 50	11 00	13 00	14 20
	Denver	11 00	12 50	14 50	16 20
	Kansas City	10 00	11 50	13 50	15 05
Lordsburg, " "	El Paso	7 50	9 00	11 00	12 80
	Pueblo	9 00	10 50	12 50	14 80
	Denver	9 50	11 00	13 00	15 75
	Kansas City	9 50	11 00	13 00	15 75
<b>S. C. D. &amp; P. R. R.</b>					
Silver City, " "	El Paso	2 50	3 20	4 70	6 00
	Pueblo	6 50	8 00	10 00	11 20
	Denver	8 00	9 50	11 50	13 20
	Kansas City	8 50	10 00	12 00	14 18
Hudson, " "	El Paso	2 40	3 00	4 50	5 60
	Pueblo	6 50	8 00	10 00	11 20
	Denver	8 00	9 50	11 50	13 20
	Kansas City	8 50	10 00	12 00	13 20
Deming, " "	El Paso	2 20	2 80	3 80	5 20
	Pueblo	6 00	7 50	9 50	10 80
	Denver	7 50	9 00	11 00	12 80
	Kansas City	8 00	9 50	11 50	13 40
<b>A. T. &amp; S. F. R. R.</b>					
Florida and Lake Valley	El Paso	2 20	2 80	3 80	5 00
	Pueblo	6 00	7 50	9 50	10 80
	Denver	7 50	9 00	11 00	12 80
	Kansas City	8 00	9 50	11 50	13 40
Nutt, " "	El Paso	2 20	2 40	3 40	4 80
	Pueblo	6 00	7 00	9 00	10 80
	Denver	7 50	8 00	10 50	11 80
	Kansas City	8 00	8 00	11 00	12 20
El Paso, " "	El Paso	6 00	7 50	9 50	11 80
	Denver	7 50	9 00	11 00	12 80
	Kansas City	8 00	9 50	11 50	13 40
Las Cruces, " "	El Paso	1 50	2 00	3 00	4 00
	Pueblo	6 00	7 50	9 50	11 80
	Denver	7 50	9 00	11 00	12 80
	Kansas City	8 00	9 50	11 50	13 40
Alcon, " "	El Paso	2 00	2 00	3 00	4 00
	Pueblo	6 50	7 00	9 00	10 80
	Denver	7 00	8 50	10 50	12 40
	Kansas City	7 00	9 00	11 00	13 00

FROM

TO

Car Loads in dollars and per ton of 2,000 lbs.

Ore Concentrator.

Valuation not to exceed \$50 per ton.

Valuation not to exceed \$100 per ton.

Valuation not to exceed \$300 per ton.

Lead Bullion, valuation not to exceed \$100 per ton.

Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.

A. T. &amp; S. F. R. R.

ATLANTIC &amp; PACIFIC RAILROAD

Engle, N. M.	El Paso	2 20	2 80	3 80	5 00
Crocker, " "	Pueblo	6 50	7 00	9 00	10 20
	Denver	7 00	8 50	10 50	11 40
	Kansas City	7 50	9 00	11 00	14 20
Lava, " "	El Paso	2 20	2 80	3 80	5 40
	Pueblo	6 20	6 70	8 70	10 00
	Denver	6 70	8 20	10 20	11 20
	Kansas City	7 20	8 70	10 70	15 80
San Marcial, " "	El Paso	2 40	3 00	4 50	5 80
	Pueblo	6 20	6 70	8 70	10 80
	Denver	6 70	8 20	10 20	11 80
	Kansas City	7 20	8 70	10 70	15 80
Carthage, " "	El Paso	2 60	3 20	4 70	6 00
	Pueblo	6 20	6 70	8 70	10 80
	Denver	6 70	8 20	10 20	11 80
	Kansas City	7 20	8 70	10 70	15 40
San Antonio, " "	El Paso	2 40	3 20	4 70	5 80
	Pueblo	6 20	6 70	8 70	10 80
	Denver	6 70	8 20	10 20	11 80
	Kansas City	7 20	8 70	10 70	15 20
Magdalena, " "	El Paso	2 80	3 00	5 10	6 20
	Pueblo	6 00	6 50	8 50	10 80
	Denver	6 50	8 00	10 00	11 80
	Kansas City	7 00	8 50	10 50	15 60
Socorro, " "	El Paso	2 80	3 20	4 70	6 00
	Pueblo	6 00	6 50	8 50	10 80
	Denver	6 50	8 00	10 00	11 80
	Kansas City	7 00	8 50	10 50	15 00
Albuquerque, " "	El Paso	3 00	4 00	5 50	7 00
	Pueblo	4 50	5 00	7 00	8 40
	Denver	5 00	5 50	7 50	10 80
	Kansas City	5 50	6 00	8 00	14 00
Bernalillo, " "	El Paso	3 20	4 20	5 70	7 20
	Pueblo	4 20	5 20	7 20	8 80
	Denver	5 20	6 20	8 20	10 80
	Kansas City	5 70	6 70	8 70	14 00
Wallace, " "	El Paso	3 40	4 40	5 90	7 40
	Pueblo	4 20	5 20	7 20	8 80
	Denver	5 20	6 20	8 20	10 80
	Kansas City	5 70	6 70	8 70	14 00
Los Cerillos, " "	El Paso	3 60	4 60	6 10	7 60
	Pueblo	4 00	5 00	7 00	8 40
	Denver	5 00	6 00	8 00	9 40
	Kansas City	5 50	6 50	8 50	13 80
Flagstaff, A. T.	El Paso	6 50	8 00	10 00	
Prescott Jct. " "	Pueblo	7 50	9 00	12 00	14 00
	Denver	9 00	10 50	13 50	16 00
	Kansas City	9 50	11 00	14 00	17 00
Peach Spgs. " "	El Paso	7 50	9 00	11 25	
Hackberry, " "	Pueblo	8 00	9 50	12 75	18 20
	Denver	9 50	11 00	14 20	18 48
	Kansas City	10 00	11 50	15 20	18 48
Klingman, " "	El Paso	7 50	9 00	11 25	
	Pueblo	8 00	9 50	12 75	18 60
	Denver	9 50	11 00	14 20	18 80
	Kansas City	10 00	11 50	15 50	18 80
Yucca, " "	El Paso	7 50	9 00	11 75	
	Pueblo	8 50	10 00	14 25	18 00
	Denver	10 00	11 50	15 80	19 00
	Kansas City	10 50	12 00	16 80	19 00
Needles, Cal.	El Paso	7 75	9 25	12 00	
	Pueblo	8 50	10 00	14 50	19 40
	Denver	10 00	11 50	16 20	22 60
	Kansas City	10 50	12 00	17 20	22 60
Fenner, " "	El Paso	8 25	9 75	12 75	
	Pueblo	9 00	10 50	15 25	22 50
	Denver	10 50	12 00	16 80	23 20
	Kansas City	11 00	12 50	17 80	23 20
Bagdad, " "	El Paso	8 50	10 00	13 75	
	Pueblo	9 50	11 00	15 50	23 50
	Denver	11 00	12 50	17 20	24 00
	Kansas City	11 50	13 00	18 20	24 00
Daggett, " "	El Paso	9 00	10 50	14 50	
	Pueblo	10 00	11 50	17 00	21 80
	Denver	11 50	13 00	18 00	24 75
	Kansas City	12 00	13 50	19 00	25 00
Barstow, " "	El Paso	9 00	10 50	14 75	
	Pueblo	10 00	11 50	17 25	21 80
	Denver	11 50	13 00	18 00	25 00
	Kansas City	12 00	13 50	19 00	25 00
Kramer, " "	El Paso	9 50	11 00	15 21	
	Pueblo	10 50	12 00	17 71	22 80
	Denver	12 00	13 50	19 37	26 80
	Kansas City	12 50	14 00	20 37	26 80
Mojave, " "	El Paso	10 00	11 50	15 75	
	Pueblo	11 00	12 50	18 25	22 80
	Denver	12 50	14 00	19 80	26 20
	Kansas City	13 00	14 50	20 80	28 20

## Rates on Copper or Zinc Ore to Canon City.

Taking Effect July 1st, 1891.—So far as rates on Copper or Zinc Ores are concerned, Canon City, Col., will be considered as common with Pueblo; in other words the rates shown in Tariff as applying on shipments of Ore to Pueblo, will also apply on shipments of Copper or Zinc Ore to Canon City.

In the absence of positive information as to the value of Ore, Ore Concentrations, or Base Metal, Agents will bill at rates sufficiently high to protect the Company. These rates can be corrected when evidence of actual value is produced.

The market price at destination, to be verified by assays made

by the Railroad Company, at owner's expense, will govern the value and determine the rate.

Agents must cause shippers to understand the condition upon which these rates are based, and should make their receipts read: "Rates subject to correction according to value at destination."

These rates only apply on lots of ten tons or over. On lots of four tons and under ten, 20 per cent, and on lots of one ton and less than four, 40 per cent will be added to above rates. Base Metal, Copper Matte and Ore Concentrations, in lots of less than one ton, will take first-class rates from all the above points, except when the rate based on valuation makes it higher, that rates on small lots of high value may not be less than the rates when in lots of one ton or over as above.

Charges on Ore in car-loads must be guaranteed, and on lots less than a car-load must in all cases be prepaid.



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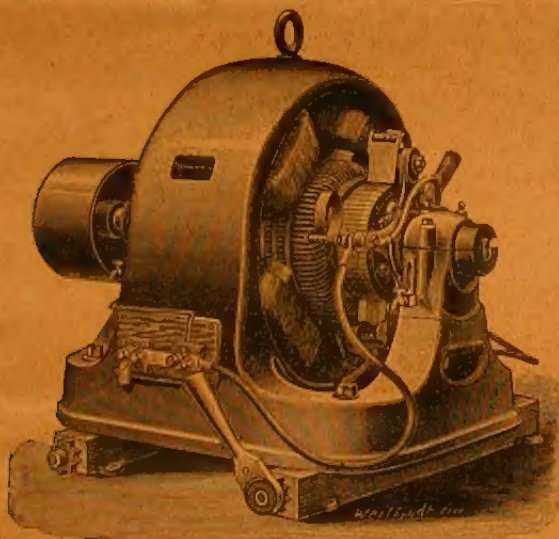
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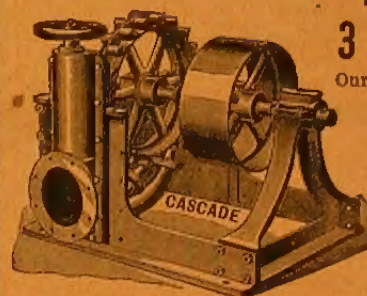
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Our experience of 33 YEARS  
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With Automatic Ore Loader and  
Automatic Dumping Device

For Conveying  
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Vulcan Iron Works:—GENTLEMEN. The rope-  
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satisfaction. We transport 200 tons of tailings in ten hours; one man does the whole busi-  
ness, including elevating tailings from hopper in the ground, operating Vulcan self-loader, and  
attending to the ropeway generally. The self-dumper requires no attention whatever. The Vulcan loader I consider the  
best feature in the whole Ropeway, making it possible for one man to load 200 tons in ten hours.

Yours very truly,

J. P. WOODBURY, Supt.

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Manufacturers of Mining Machinery,  
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Write for full price list and mailing envelopes.



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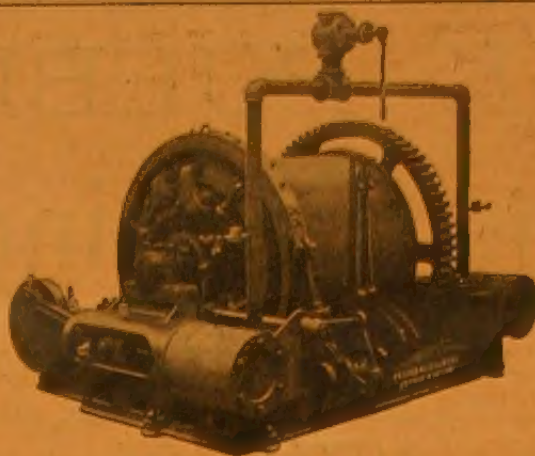
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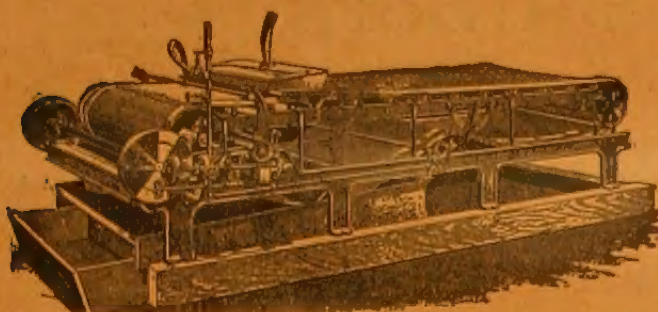
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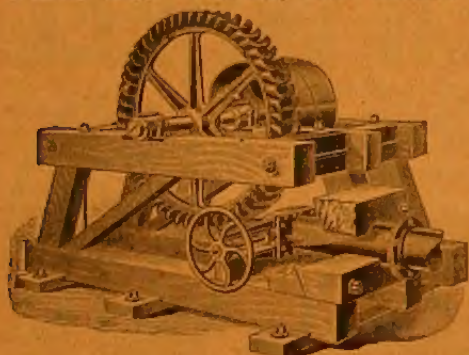
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GOLD AND SILVER STAMP MILLS

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